# Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOLUME IX.] NEW-YORK AUGUST 26, 1854. [NUMBER 50.

THE
SCIENTIFIC AMERICAN,
PUBLISHED WEEKLY,
At 128 Fulton street, N. Y. (Sun Buildings.)
BY MUNN & CO.

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### The California Snake Bird.

Alexander S. Taylor, of Monterey, in his "Familiar Sketches of the Natural History of California," says, that in the coast counties of Southern California there exists a singular species of bird, generally called, on account of his well known mortal aversion to all members of the snake tribe, the "snake bird." It is not a bird of prey, but lives entirely on grain, like the gallinacia. When full grown, it measures two feet from the end of its tail to the tip of its beak. The tail has four or five long feathers tipped with white. Its feet are furnished with four toes, two in front and two behind, and all are guarded with sharp, needle-like claws. The color of the bird is a mottled, yellowish gray, and it rarely attains the weight of a pound. Its beak is two and a half inches long, and very hard and sharp.

When this bird finds a rattlesnake—and rattlesnakes are to be found in great numbers in Southern California, wherever the ground is covered by the cactus plant—it immediately proceeds, with the greatest caution and despatch, to gather the fallen cactus fruit and dry lobes, and quietly enclose him in to the hight of a foot or more—the spikes and spines of the plant, strong and sharp as needles, serving as an insurmountable barrier to the escape of the snake. This being accomplished, the bird gathers with its feet and claws the young cones of the pine, which are as hard and heavy as stones, and hovering over its enemy, lets them fall, one by one, from a hight of five or six feet, upon the infuriated viper, who, surrounded by prickles and points wherever he turns, is soon fully aroused to the danger of his position. The bird, with malicious screams, continues to drop cone after cone, until his foe is exhausted, and then picks the snake to death with its iron beak.

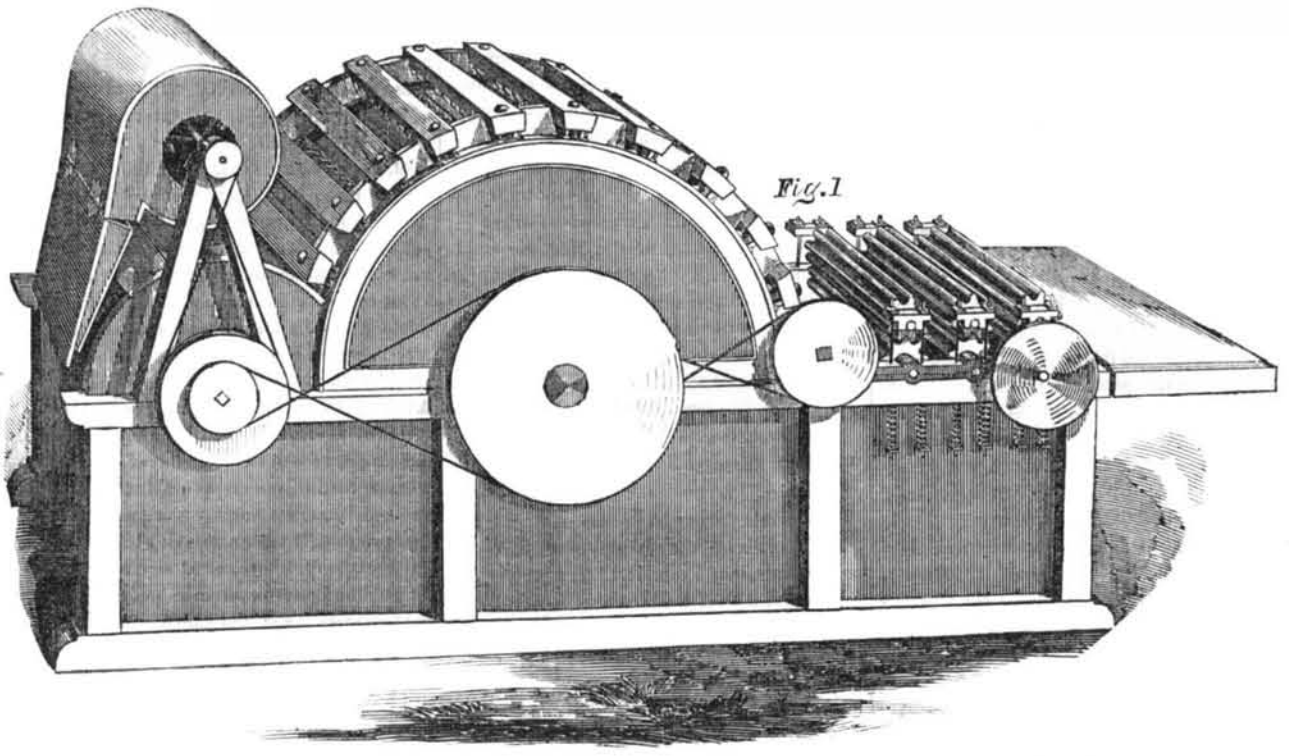
### French Exhibition.

M. Gardissal, our agent in Paris, writes that "notwithstanding the influence of war and apprehensions respecting the crops, immense preparations are being made for the Exhibition. The Palais de l'Industrie is approaching its finish, and supplementary buildings are being added, so as to treble the showing room." We are urgently called upon to request American manufacturers to take their proper position in the Exhibition. We perceive very little spirit among our people respecting the affair, but we hope their skill and genius will be fully represented.

### Cannelton Cotton Factory.

In the "Scientific American" of the 29th July, there was a notice of the success of the cotton factory at Cannelton, Kentucky. It should have been Cannelton, Indiana. A correspondent informs us, that upon the opposite side of the river, four miles from Cannelton, there has been a large cotton mill standing idle and for sale, for more than a year. The great success of Cannelton, Indiana—the town and manufactories—he attributes to the abundance and cheapness of coal in its immediate vicinity.

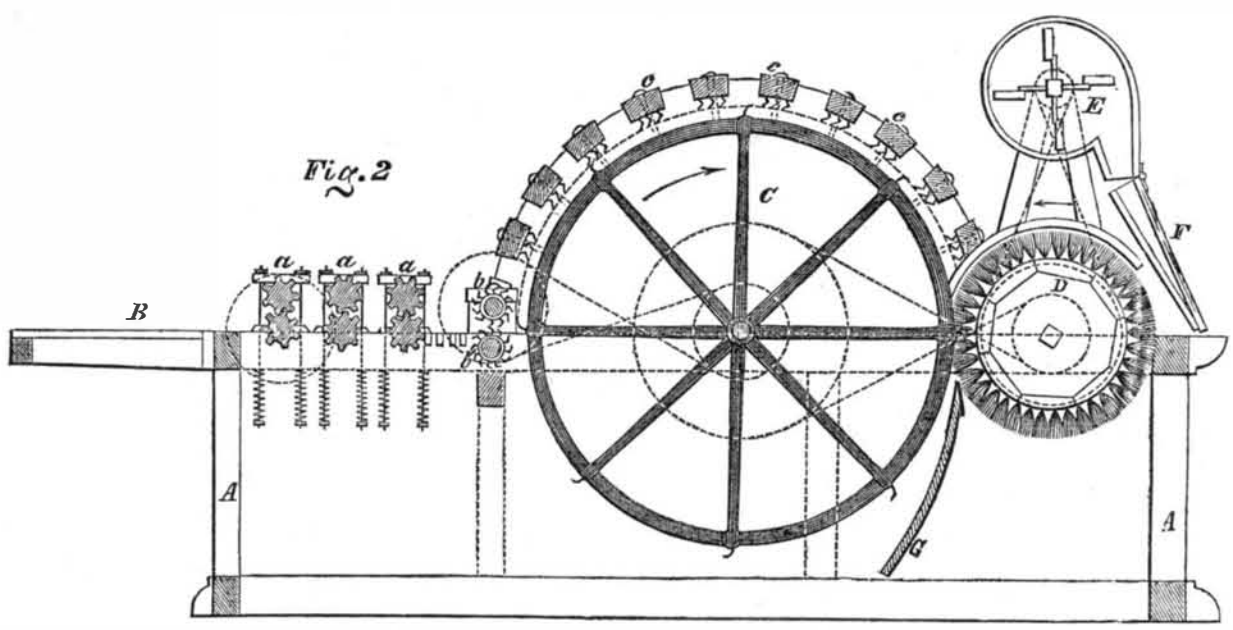
## PICKING AND CLEANING FLAX.




On the 14th of last February a patent was issued to A. H. Caryl, of Sandusky, Ohio, for the improvements in machinery for Dressing Flax, represented by the accompanying engravings, of which figure 1 is a perspective, and figure 2 a vertical longitudinal section.

The object of this machine is for breaking and cleaning tangled flax straw. The machines now in use are of two kinds; one without the breaker for cleaning scutched tow, the other as here represented; the apparatus for breaking the straw having been added since the patent was granted.

A is a stout frame, and B a feed table for the tangled flax straw, which has been thrashed for the seed, and which our farmers unwisely, for want of proper machinery, have heretofore generally suffered to rot in the barn yard. For the table, B, an endless revolving apron is used on the working machines; *a a a* are fluted breaking rollers, to which the straw is carried by the apron, B. These rollers have their bearing boxes resting on springs so as to accommodate their pressure to unequal quantities of the straw, which is well broken—that is the heart, boon, or woody part of it, when it reaches the feed card rollers, *b b*. Between the breaking rollers, *a*, and the ones, *b*, there is placed a small revolving table which carries the straw from the breakers into the feeders. These latter, *b b*, extend the whole width of the frame and are covered with coarse cards, the teeth of which are hooked towards the fluted rolls (contrary to the mode represented by a mistake on the model, from which the draughtsman made the drawings) to prevent the flax being too rapidly drawn into the large picker cylinder, C. This cylinder has part of its periphery covered with section cards, as shown, and between these there are slats or wire rods to sustain the flax. There is also a stationary cover secured on the frame over the picker cylinder. This cover is formed of section cards, *c c*, with their teeth inside. The picker revolves in the direction shown by the




arrow and draws in the flax through the feed card rolls, *b b*, and scrapes off most of the woody matter. As the flax is carried upward by the picker cylinder, it is held to the action of the top stationary cards, *c c*, by the slats or cross rods on its periphery. The *shive* or woody matter of the flax, by this carding action, is separated from the fibrous part and falls down through the open slats to the pit below; D is a brush roller placed behind the picker, C, and revolves as shown by the arrow. Below it is placed a curved spring curb, G, with a thin edge. When the flax is carried over by the picker, C, this edge holds it to the action of the brush roller, D, which thereby licks it up and carries it round to be discharged at the back end of the machine. The flax is stripped or blown off the brush roller by a strong blast from the fan blower, E. This blast is concentrated in the tapering hinged trunk, F, and directed on the brush roller, which revolves in an opposite direction to the blast. By this means the flax is stripped from the brush and laid open and loose upon the floor. This explanation of the figures will render the operation of the machine perfectly clear to any person. One of these machines is now in operation at Little Falls, N. Y., and two in Ohio—one in Sandusky and the other in Painsville.

More information respecting it may be obtained of J. T. Daly, No. 113 Wall street, this city, or of the patentee, in Sandusky, Ohio.

### The Ericsson.

The *steamer* Ericsson went down the Bay yesterday, on another trial trip.—[N. Y. Tribune, Aug. 18th.

Oh! what a change, Mr. T——.

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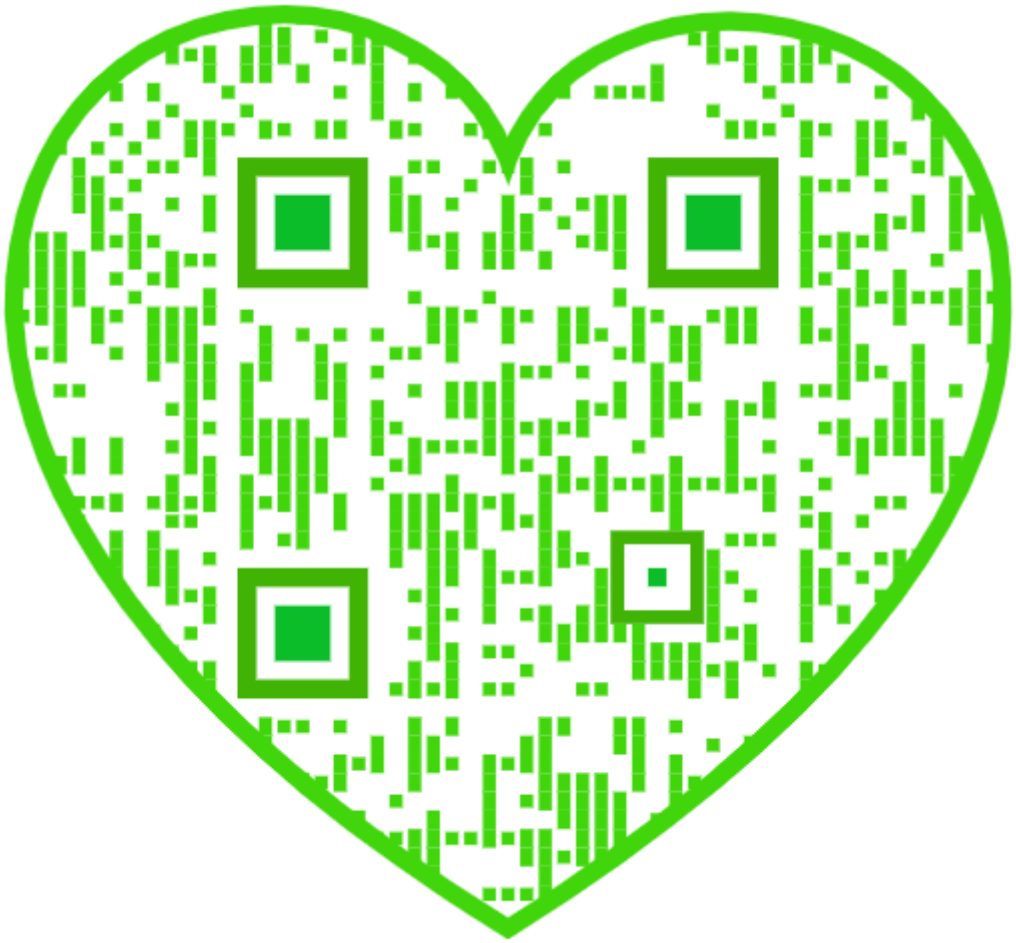

### Flax Industry.—No. 14.

FLAX INDUSTRY IN FRANCE.—It is not known at what precise time the use of fabrics from flax, and the cultivation of the plant, were introduced into Gaul. It is probable that the Romans, at the period of their rule, cultivated this plant there and made garments of it; but it does not seem probable that the barbarians of the North, as soon as they were established in the Gallo-Romanic provinces, should have remained a long time without cultivating the plant from which in these forests, they had obtained their clothing.

The most reliable documents which we possess respecting the culture of flax in France, date from a period much nearer our time. According to these documents, Beatrice of Gaure, Countess of Penkembourg, in Flanders, having married in the 13th century, a nobleman of Laval, introduced into her new country some weavers from Bruges, and taught the inhabitants of Anjou and Brittany the culture of flax and the art of weaving it after the manner of her native country. Laval soon possessed a manufactory of linen as celebrated as those of Flanders. Maine, Anjon Vendee, and Brittany were soon famed for their abundant crops of flax; but in spite of this example and the prosperity due to this production, the cultivation of it spread slowly into most of the other provinces. "Our opinion," says M. Mareau, a French writer, "is that Beatrice of Gaure was instrumental rather in perfecting than introducing the cultivation of flax and of weaving. For in reality this knowledge was carried to England by the Normans at about the 11th century, from which we must naturally infer that the province of Normandy had been long acquainted with flax, since its inhabitants were able to appreciate the advantages and the resources which this material offered at the time of the invasion of Great Britain."

The ancient celebrity of the pulled flax of Valenciennes, of its cambrics and lawns—a celebrity which she has preserved amid all the revolutions which industrial pursuits have encountered, would seem to show that this country understood and practiced the cultivation of flax and the art of spinning at the same time as Tourney, Courtray, Bruges, and the other cities of Belgium. Although it may be shown from the history of flax husbandry in Belgium, that the weaving of damask was practiced in that country from the 15th century, it would appear certain that this branch of industry had made more progress in France than with her neighbors, for the manufacture of damask table cloths was introduced into Andernarde from Lille in 1665. At the present day the flax culture is receiving great attention in France, and is destined to be one of the most important agricultural staples of the country, inasmuch as while favored by soil and climate, the exertions of Government and the efforts of private individuals are directed unceasingly to this end.

The cultivation of flax in France is more universal than any other one product of the soil. Like the potato in the Northern States of this country, it is considered as a necessary portion of every cultivated tract. "Perhaps," says M. Mareau, "not a single commune is to be found there where there will not exist at least one parcel of land set apart for this crop. The little reserved field of the petty farmer, or the square garden of the proprietor who produces flax is cultivated, carefully tended, and pulled with that interest which attaches to everything connected with the family welfare. Expense is not considered, the only object being to obtain fine flax. The family visit it, and when it is gathered the housewives show it to their neighbors and receive their praises mingled with a little envy. Each one strives to gather as much as may be needed to repair and replace the linen of his family, in order to prepare, by a wise foresight, for the outfit of his children to aid in making the cloth which must clothe them. The mother of the family prepares and spins the flax during the winter evenings, and in many places this labor is done by the light of lamps fed with oil extracted from the seed."

"Beyond the great centers of production even in countries where agricultural labors are, from the peculiarities of the soil or other causes relating to the climate, directed to a particular cultivation, as that of the vine, silk, &c., we find that there springs from the products of a limited cultivation of flax a commerce circumscribed, it is true, but still sufficient to insure a certain support to the artizans who engage in the business. It is from this crop of the housewife that the spinner and oil presser of the neighborhood live, two employments which, where the progress of manufacturers, by the division of labor and the consequent good market for its products transformed the world, seemed to remain unchanged in the midst of the commune, as if to show perpetually to new generations the contrast between the simple and honest manners of our fathers, laboring in families, with those of the workmen, for the most part so different, who live crowded together in large workshops."

Apart, however, from the domestic flax industry of France, which we have shown to be so extensive, there are six districts where the cultivation and manufacture of flax is especially the business and the source of wealth to the inhabitants. These districts, known from the designation of their principal towns, are Lille, Abbeville, and Saint Quentin, Lisieux, Morlaix, Mans, and Fontenay-le-Comte.

### Prof. Page's Electric Engine.

MESSRS. EDITORS—Constantly as I am employed in my professional duties, I am not at the present moment at leisure to enter into any minute details on the subject of Prof. Page's experiments, but I cannot resist your request to give you a brief statement of facts relating to the subject, and at a future day I shall publish a full account of the whole matter. Prior to Prof. Page's discoveries, all that was known of the axial attraction of a coil of copper wire was the philosophical toy known as De La Run's Ring, and it was never for a moment supposed that a force of any practical utility could be derived from such a source; the writer has letters from Profs. Faraday and Grove, of London, assuring him that up to the time of Prof. Page's discoveries there never was a pound weight raised by this force. The first experiment of Page was with a very small engine, such as are constantly brought out to astonish the world, by the numerous tribe of inventors on this subject. A larger one was soon after made, which showed an increase of power in greater ratio than the increase of size—this looked like a discovery in the right direction, and he very soon raised a bar of fifty pounds weight, contrary to the expectation of all his scientific friends. This was an onward step, and an engine was then made that drove a double medium cylinder printing press having a power about equal to half a horse power. After this Congress made a small appropriation to carry out the invention, which was expended principally in preliminary investigation; but two engines were built and proved—the first was examined and proved by Prof. Mapes for a company in New York, who thus describes what he saw, in his report, to those gentlemen. After describing the engine in general terms, he says, "to the engine was connected by a shackle bar, a crank on a fly-wheel shaft; the crank 12 inches long, and the fly wheel four and a half feet in diameter." Before starting the engine I tied an arm of the fly-wheel at one-third greater distance from the center than the length of the crank, to an upright beam of twelve inches square, which formed part of the frame of the engine. The cord used was the better kind of bed cord, of great strength, and nearly three-eighths of an inch in diameter, this was passed twice around the fly-wheel arm and post, before being tied, and with pieces of sole leather intervening to prevent the cord from being cut by the corners of the post. Such a fixture, I am confident, would have held a five horse power steam engine from starting with full pressure of steam on the piston, and no previous motion. Not so, however, with this engine, for the breaking the string, and the attachment of the battery occurred at the same instant of time, leaving an impression in the beam to the depth of the cord, despite the protection of the sole leather." Such are the facts noted by Prof. Mapes; we will not quote his sanguine deductions therefrom; but he says he measured the power of this engine, while working, and found it to be 6·84 horse-power. As to the cost of this power, he thinks, from the imperfect data he had before him, it might be about twenty cents per diem for each horse power. This report needs no comment from the writer; it certainly shows anything but failure.

The next engine built by Prof. Page was a locomotive for railroads, which the liberal and accomplished superintendent of the Baltimore and Ohio Railroad generously permitted to be tried on the Washington branch of that road. This machine was of the rudest and most primitive character: Prof. Page had had no experience as an engineer, and but little in the construction of machinery, and it was a matter of wonder and surprise that this rude structure would move at all; it weighed, according to Prof. Page, with its load, between eleven and twelve tuns; its battery was so badly made that he lost the use of a greater portion of it, yet notwithstanding all these difficulties it was run out to Bladensburg and back, a distance of about twelve miles in all. The fastest rate of this engine on a level was at the rate of nineteen miles per hour, which was carefully calculated by the revolutions of the driving wheels. At this point in the progress of the invention, the money furnished by government was all exhausted, as well as that of Prof. Page's immediate friends, and he found himself in debt to a considerable amount, consequently the further progress of the undertaking then stopped; not because of failure, or of any doubt on the part of the Professor as to its practicability or final success. For the above reasons, in my former article, I proved the declaration of your correspondent *false*. I am willing to leave it to your readers to say if the judgment was too severe.

J. J. G.

New York.

### Unhealthiness of some Trades.

The following is an interesting extract from a paper recently read by Dr. Chalmers, of London, before "the Society of Arts:"

"There are two coal-whippers at a time of commercial crisis in the coal trade; fewer hands are wanted; one gets turned out of work, and the other is kept on. In six months time the one out of work is starving, because he was so weakened by temporary want of food that he was not fit for employment when he could get it. It is the business of the political economist to remedy commercial crisis. The other man has worked as hard as possible in the way you know these fellows are engaged, jumping up a foot or two, and throwing their whole weight on to a rope for ten or twelve hours a day; it is, I believe, the most wasteful, unscientific, and pernicious expenditure of human muscle that ever was devised. The consequence is that his heart cannot stand it, the fibers are continually strained with these continued violent jerks, and the organ becomes diseased. After a tedious illness the industrious, well-paid man dies at forty. Here it is that industrial pathology comes into play. It is the duty of that science to find out why such and such labor is injurious in a special manner, and to suggest a remedy. In the instance quoted above, it is the sudden jerk which is the cause of the injury to the circulation. Again, painters are liable to cholic and palsy from the use of white lead, and may introduce a substance equally convenient in the shape of white zinc or other substitutes. Tailors sit all day in a confined atmosphere, with the legs crossed and the spine bowed, so that neither the ribs nor the digestive organs have room to act. The consequence, of course, is that the stomach and bowels become disordered, the spine twisted, and the gait shambling, and the power of taking the exercise necessary to health obliterated. If an artist wants to represent a starveling, he takes a tailor as his model; if a plump rosy man was to tell you he was a journeyman tailor, you would not allow such an evidently inexperienced workman to mend your coat. With a life embittered by indigestion, what wonder that a tailor takes to opium, gin, and tobacco, the only things that make existence endurable? Now, cannot these evils be corrected? The cross-legged position is assumed because in the ordinary sitting posture the heavy cloth could not be held near enough to the eye. The problem is to invent some sort of table that would be equally convenient. Shoemakers and bootmakers suffer equally from a constrained position, and also from the pressure of the last against the stomach. Heartburn and painful digestion are so common, that a certain pill in the Pharmacopœia (the Pilula Sagapeni Comp.) is called the cobler's pill. Looking-glass makers and water-gilders are constantly coming into hospitals for mercurial paralysis; and when they go out of the hospital they are not fit for much else than the workhouse. There are two ways of remedying this: one is to give give them some protection against the poisonous fumes; and the other is to improve and cheapen rival modes of gilding and silvering, in which mercury is not used. Washerwomen constantly suffer from varicose veins and other mechanical disorders arising from the standing posture. It is the business of industrial pathology to devise a chair in which they can work as at present, or else to discover some mode of doing the same thing by the agency of mechanics, which is now done immediately by the unaided body—to wear out mechanism instead of muscle, iron instead of energy."

### The Power of Imagination.

In a lecture recently delivered by Dr. Noble, at Manchester, England, on the "Dynamic Influences of Ideas," he told the following anecdote of M. Boutibouse—a French savant:

"M. Boutibouse served in Napoleon's army, and was present at many engagements during the early part of last century. At the battle of Wagram, in 1809, he was engaged in the fray; the ranks around him had been terribly thinned by shot, and at sunset he was nearly isolated. While reloading his musket, he was shot down by a cannon-ball. His impression was, that the ball had passed through his legs below his knees, separating them from the thighs; for he suddenly sank down, shortened, as he believed, to the extent of about a foot in measurement. The trunk of the body fell backwards on the ground, and the senses were completely paralyzed by the shock. Thus he lay motionless amongst the wounded and dead during the rest of the night, not daring to move a muscle, lest the loss of blood should be fatally increased. He felt no pain, but this he attributed to the stunning effect of the shock to the brain and nervous system. At early dawn he was aroused by one of the medical staff, who came round to help the wounded. "What's the matter with you, my good fellow?" said the surgeon." "Ah! touch me tenderly," replied M. Boutibouse, "I beseech you; a cannon-ball has carried off my legs." The surgeon examined the limbs referred to, and then giving him a good shake, said, with a joyous laugh, "Get up with you, you have nothing the matter with you." M. Boutibouse immediately sprang up in utter astonishment, and stood firmly on the legs which he had thought lost for ever. "I felt more thankful," said M. Boutibouse, "than I had ever done in the whole course of my life before. I had not a wound about me. I had, indeed been shot down by an immense cannon-ball, but instead of passing through the legs, as I firmly believed it had, the ball had passed under my feet, and had plowed a hole in the earth beneath, at least a foot in depth, into which my feet suddenly sank, giving me the idea that I had been thus shortened by the loss of my legs."

[We were acquainted with an old mechanic who happened to get his arm crushed in the gearing of a mill, and in consequence had it amputated above the elbow. We met him four days afterwards, and asked him how his arm was getting on, "very well," says he, 'but I feel a continual pricking away down at the points of my fingers." The same confusion of ideas has been experienced by others who have had their arms and limbs amputated.

Prescott, our eminent countryman, and Macauley, have been elected Members of the Royal Irish Academy.

Years are the milestones which tell us the distance we have travelled.

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### Steam Carriages for Common Roads.

According to our promise of last week, we hereby present a brief history, with some reflections, on the attempts to use steam coaches on common roads. We would not do this at present, but for communications on the subject which have appeared in some of our daily papers, the tendency of which is to throw dust in the eyes of the people.

The idea of applying steam to propel carriages on common roads is somewhat ancient. A patent was issued for such an application in our country during the Presidency of Washington; and in 1804 Oliver Evans, of Pa., constructed a small steam wagon. In Europe the idea is older still, for in 1763, John T. Cugnot, a Frenchman, constructed a model carriage moved by steam, and exhibited it in the city of Brussels. The application of steam to wagons was suggested in the first patent of James Watt, and from this hint his friend William Murdock, in 1784 constructed a small working model, which is yet in existence. In 1811, Charles Reynolds, of East Windsor, Conn., obtained a patent for a steam carriage, and in 1823, Louis Bigelow, of Petersham, Mass., also obtained one. None of these inventors, so far as we know, ever built a large steam carriage; the serious difficulties to their use on common roads, no doubt, deterred them. These difficulties were first tested in 1821, by J. Griffith, of Brompton, England. He constructed a large carriage, but it was soon rendered useless. In 1824, Messrs. Burstall & Hill built a steam coach, and made some experiments in London; this carriage was a failure too. In 1826 Goldsworthy Gurney, of London, an energetic and ingenious man, took up the subject in earnest. Of him, Luke Hebert in his history says, "he has done more on experimental trials than any other individual, owing probably to his having had greater funds placed at his disposal; it must also be admitted that he has succeeded in making more extended journeys at the speed of ordinary stage coaches, than his cotemporaries." After Gurney's first carriage was built, one was constructed by David Gordon, but it proved unsuccessful. From 1826 to 1830 a number of steam-coach inventors appeared on the field of action, and in the latter year there were either five or six steam carriages running on different roads in England. Sir Charles Dance, Sir James Anderson, Colonel Maceroni, Dr. Church, Gurney, Sumner and Ogle, and Walter Hancock, built and run carriages.

In 1832, a Committee appointed by Parliament made a report on the subject of using steam coaches on common roads. It was exceedingly favorable to their use, and set forth only one obstacle to their success and the annihilation of common stage coaches; that obstacle was the excessively high tolls charged. These the committee recommended to be reduced. The testimony of some very distinguished persons was favorable to the steam coach, but the most of that testimony was *ex parte*, and could not be fully trusted. All the steam coaches then made and experimented with, were eventually laid aside.

One reason why higher tolls were charged for steam than common stage coaches was owing to their greater weight; they soon cut up the roads into deep ruts. It was asserted that although their weight was greater, they were no more severe on roads than common stages, the horses' feet of which, it was alleged, were more destructive than the heavy steam carriages. This the road trustees could not believe with their eyes open; the wheel tracks on all roads involve the greatest expenditure for repairs.

In 1833 or '34 two steam coaches were run for a short period in Scotland, between the city of Glasgow and the town of Paisley. The distance was seven miles, the road nearly all the way as smooth as a floor. The boiler of one of these steam-coaches having exploded, killing four or five persons, an injunction was issued against them. We have been informed by one that these coaches were "Gordon's," by another that they were made by Robert Napier, while a third says they were built by that excellent engineer, Scott Russell. It makes no matter who was the builder, nor whether they run in 1833 or 1834, the name and date are of very little consequence; the fact is the main point, and that is not denied. These coaches were well built, but they failed to compete with the stage coaches, which run along with them in opposition. These steam coaches paid no toll's, for, by the law, tolls could only be charged for carriages drawn by horses. By another law, no stones (road-metal) could be placed on the road by the trustees of more than one cubic inch in size. The laws are very strict in regard to road obstructions in that country, and had the steam coach, as has been asserted, been broken down by uncommon obstructions placed in its path, those who placed the obstuctions there would probably have been either hanged or sent to a penal colony. None of the horse stages broke down on that road, and they had to pass over the same obstacles, if any, as the steam coaches. As steam coaches for common roads have all to be built very light, their boilers have either to be made very small, thereby increasing the danger from running short of water, or else they have to be made of very thin metal, and are therefore very subject to explosions from a slight overpressure.

In 1836, all the inventors of steam coaches for common roads had disappeared from the scene of contest in Britain, excepting Walter Hancock, and in that year his carriage run constantly for twenty weeks. In a letter to the London "Mechanics Magazine," dated September 22, of that year, he says: "years of practice have put all doubts of the economy, safety, and superiority of steam traveling on common roads, at rest, when compared with horse traveling, and I have now in preparation calculations founded on actual practice which will, when published, prove that steam locomotives on common roads is not unworthy of the attention of the capitalist, though the reverse of this has been denied rather mildly of late, by parties who do not desire that this branch of improvement should prosper against the interests of themselves." Where now are Hancock's carriages? If they were economical, as he asserted they were, why have they disappeared?

As all the horse stages have disappeared from the common roads in England, for ten years, and as the toll keepers and road commissioners would very gladly see steam coaches take their place, it follows, that the folly of contending against railroads has become evident to Gurney, Russell, Gordon and others, or else they would not for ten years have let the opportunity pass away unimproved. There has not been a steam coach running on common roads in England for eighteen years; all those built—and we suppose there were more than twenty of them—failed of success. We are sustained by positive facts in making this assertion. It is the railroad, in conjunction with the locomotive, which has been the means of opening up and affording those great facilities which now exist for inland commerce and travel.

The great sensible idea which now prevails, is not to convert the stage into a steam coach for common roads, but to convert common roads into railroads. Those who feast on obsolete ideas of a different character, appear to be neither sober nor sensible men. Why, because it is the rail that removes the great obstacles to rapid, cheap and safe travel, for at a speed of ten miles an hour, according to Tredgold, a horse can draw nine times more on a railroad than on a common road; and yet in the face of common sense, and all engineering experience, some propose, in this age of improvements to use steam-coaches on common and plank roads. In 1851 a plan was proposed in this city for building a new steam carriage for common and plank roads, and an association with an assumed capital of $100,000, we believe, was organised for this purpose. The steam carriage was asserted to be an improvement on all others; and one of these improvements was placing the cylinders outside of the wheels, an arrangement which gained for "Bury's" locomotives the title of "Boxers." The arrangement is a bad one in every sense of the term; for at high velocities, the carriage would acquire a sinuous dangerous motion, like that of a drunken man ready to tumble into the first ditch. After three years' efforts to construct such a steam carriage, one has at last been completed by the association, we suppose. We again assert, what we have often done before, that it will prove an abortive effort—it will fail of success. Its failure or success is the issue, to test our veracity, knowledge, and experience respecting the project. Let it at once be placed on the Troy and Albany road, or any plank road in this State, for one year, or even six months, and let it (the question) be decided at the earliest date.

Before the era of railroads, the attempts to run steam coaches on common roads were plausible, but the sensible ideas and plans of one age become irrational in another. The match-lock musket was an improvement on the long-bow; and the flint-lock an improvement on the match-lock, but would any sensible man use either of them now? Not one. The idea of employing steam coaches on common roads now, if there were no railroads, might be entertained by sober and sensible men as a very good one indeed, but with our already splendid system of railroads, and these but in their infancy, such an idea, at the present time, is worthy of Rip Van Winkle.

(For the Scientific American.)

### More Bad Gas.

A very serious drawback to the enjoyment of the here existing pure air, is produced by the impure gas furnished by the company lately established. All the principal hotels have gas introduced in their bed chambers, &c.—Now this gas is furnished and consumed without being in the least purified. Price $5 per one thousand cubic feet. I was made conscious of the bad quality of the gas by being awakened from an otherwise sound sleep by experiencing an unusual difficulty of respiration. I soon found that this difficulty was produced by the well known choky effect of "Sulphate of Ammonia," produced by the consumption of this, said to be, carbonated hydrogen. I was subsequently amused by the fact that the hotel proprietors (the complaint is general) had the gas fitters in constant requisition for the purpose of finding out and stopping imaginary "leaks;" a very profitable job for the fitter, I must confess, but not very profitable, as far as health is concerned, for the lodger. Why is this nuisance tolerated?

In this connection I would call attention to the fact, that "gas companies" frequently have two or more gasometers, one of which they fill with unpurified gas, which they supply after bed hours, supposing that good enough for street illumination; but they, probably, wilfully forget that it is just after the stores and theatres are closed that impure gas produces the most mischief, for they ought to be, if they are not, aware that a considerable quantity is used in bed chambers of hotels, as well as private houses.

We have a large number of inspectors of drugs, flour, butter, lumber, &c., appointed to inspect the quantity and quality of their respective articles, but we have no public inspectors of gas. I submit whether we would not display more wisdom by appointing inspectors of gas, than by appointing any of the above named?

I have been led to call your attention to the above facts, in the hope that it will lead to a proper remedy, similar to those brought about in the place of my abode, by my former communications, for we have had little or no complaint of the quality of our gas since I then spoke out.

There are any quantities of different kinds of meters to measure quantity, but who will be the first to invent a meter to measure the quality of gas also? JOHN F. MASCHER.

Cape May, August, 1854.

### Electricity as a Motive Power.

MESSRS. EDITORS.—It was not my intention at first to make any reply to the article of J. F. Mascher, inserted in your paper of the 29th ult., (in reply to a communication of mine of the 1st of the same month,) but I have since altered my opinion, as I consider that his article although apparently a refutation of mine is on the contrary confirmatory of it. In fact by differentiating the formula $y=1\div a\times x^2$, in which $y$ expresses the power, $a$ the distance from the surface to the center of action, 1 the unity of volume, and $x$ the distance of action from the surface of an electro magnet, and replace 1 by the letter $v$, as a variable quantity, we shall obtain the following: $y=d.v\div(2a\times 2x)d.x$, which signifies that an electro magnet infinitely small, or in which the two poles are reduced into two consecutive points, exerts its action in the inverted ratio of the simple distance; or in more simple terms, the smaller is an electro magnet, and the greater is its proportional power.

No doubt Mr. M. can conceive more readily than any other person that his globular and ingenious magnets included in an elephant have never been noticed to be greater than those of a fly. But we will resume our interesting subject by the two following principles for the construction of an electro-magnetic machine, that is, one in which the electro magnets, with their two poles generate the power:

1st. An electro-magnetic machine cannot be increased proportionally in all its parts without losing its proportional power.

2nd. To compose an electro-magnetic machine, which will keep its proportional power in increasing it, we must employ an infinite number of electro magnets infinitely small and consequently beyond all human power. We may here add that the iron beads of Mr. M. are not magnets, since copper beads, which are not magnetic, would answer the same purpose, nor have we ever heard that muscles or nerves are magnetic bodies.

May we not more reasonably conceive that the current of electricity in the nerve would generate a conjugate current in the muscle, and that these two currents, by the new theory of undulation, would produce the contraction of the muscles, and consequently the animal motion. Until the contrary proof is given, we shall see no other electro magnet in nature than the earth itself, which moving rapidly in the ether, generates a current of electricity around its equator, and consequently forms a monstrous electro-magnet, the providential guide of our navy. With our present knowledge of electricity, an electro-magnetic machine of one horse-power can be constructed at a cost little exceeding the same power produced by steam, and if, at a future time, a more economical battery be discovered, with a greater amount of electricity, it is possible that a machine of three or perhaps four horse power may be brought into action, but the great defect in the principle will always exist. VERGNES.

New York City, 1854.

[This profound letter of Prof. Vergnes, along with his former one on page 331, it appears to us, exhausts the whole subject, and leaves nothing to be said.—ED.

### American Slate.

MESSRS. EDITORS.—In your paper of the 15th inst. an inquiry is made as to deposits of slate suitable for roofing, in any of the Western States. In reply I have to state that there is a very extensive deposit of slate upon the Oawchita river, near Little Rock, Arkansas. Said quarry belongs to James B. Gilmer, of Pineville, Bossier Parish, La. Mr. G. is engaged in planting cotton upon a very large scale, but has found time to work his slate quarry to some extent. The want of good transportation has so far limited his efforts, but the railroad connecting Little Rock with the Mississippi, will, when completed, remove this objection.

This quarry is inexhaustible, easily worked, and the slate as to quality and size, equal if not superior to any in the world. Slabs four or five feet square are readily obtained, or of any size and thickness desired. For more information address James B. Gilmer, as above.

Yours, G. W. R. BAYLEY.

Tigerville, Terrebonne, La., July 1854.

### Kentucky Mechanics Institute.

The Second Annual Fair of this Institution will open at Louisville, on the 26th of next month. Those who desire to exhibit there can gain all the necessary information by addressing E. E. Levering, Secretary, Louisville. We hope the mechanics of Louisville will have an excellent exhibition.

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# New Inventions.

### Breech Loading Cannon.

Our countrymen have a high reputation for inventing destructive instruments of war.—This is well known to the governments of Europe, and is the reason why a commission of officers, from England, is now in this country, in order that Uncle John may keep posted up with Brother Jonathan in shooting irons. The race, however, will be a tough one, even if the present most improved of our instruments are adopted, for invention after invention succeeds one another so rapidly, that no wonder Captain McKinnan, R. N., was not unprepared for a proposal from an American to take the Caffre war (when it existed,) on contract. Among the many new improvements in the battling line, we have to chronicle an application which has been made for a patent by S.H. Starr, Lieutenant U. S. A., (now residing at Burlington, N. J.) for a very ingenious improvement in breech-loading cannon. It is constructed with a receiver constituting the breech and charge chamber. It is bored uniform with the barrel, and has its front part or neck made of a conical form, and turned to fit into a recess made to receive it, in the barrel. This cone has a broad shoulder at its back, fitting to the rear of the barrel. The outward form of the receiver is the same as that of the ordinary cannon, except it is furnished with trunnions, a ring and a band. The breech slides back, and swings upwards, so as to receive the charge, and then it is run forward into the barrel and clamped tight with an ingenious and quickly-acting band. The improvement is a good one, as has been acknowledged by every person who has seen it.

### Washer Hinges.

It has long been a desirable object to produce a complete hinge by one molding and one casting. This has been accomplished by Nelson Gates, of Cincinnati, who has applied for a patent. The invention consists chiefly in the employment of a washer of concavo-convex or other suitable form, in every joint of the knuckle, to enable the washer to form a pivot, or to receive a portion of the knuckle which would form a pivot. A suitable number of these washers are placed in the mold of the hinge at proper distances apart, and when the metal is poured out they form a separation of the two parts of the hinge, and without any pin (as in the common hinge,) they serve as a pivot.

### Canopy Musquito Net.

The most simple and convenient net for beds we have ever seen, for preventing the entrance of musquitoes, is one recently invented by C. A. Haskins & Co., No. 84 Chambers st., this city. A rod is secured by a link and hook to each post of the bedstead, and they extend upwards at an angle of 45°, and meet in the center above the bed, and are secured there altogether under an ornamented cap.

The parts are so constructed as to fit any kind of bedstead, and the net is so arranged that it will contract and expand by an india rubber braid so as to fit snugly on every bed to which it is applied. It is portable, neat, and ornamental. By a cord, the net can be raised or lowered at pleasure by a person in the bed, and it can be taken down in half a minute and applied to another bed.

When we consider what evils are experienced here and in other places, for the want of such an excellent musquito protector, we look upon this improvement with no small degree of favor.

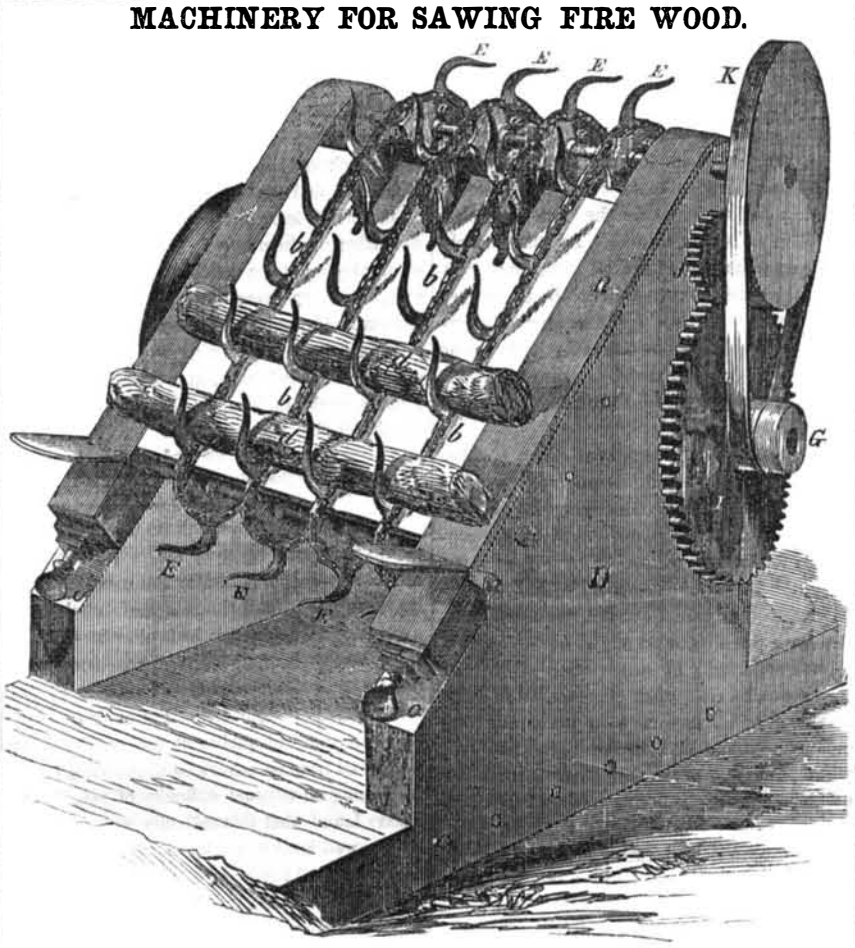
### Brick Kilns.

Washington Gordon, of Haverstraw, N. Y., has taken measures to secure a patent for an improvement in kilns for burning brick with anthracite or other coals as fuel. The fire chambers are constructed in a peculiar manner, and blasts are used for the purpose of intensifying the heat and regulating it, as desired. The burning of brick is a very nice operation. It requires great experience to do this properly. We are glad to see coal employed as a substitute for expensive wood fuel.

### Self-Fishing Fishing Rod.

This title is no misnomer. Antonio Meucci, of Clifton, Staten Island, N. Y., has taken measures to secure a patent for an improvement in fishing rods, the object of which is for the rod itself to catch and haul the fish up when it bites on the bait. The rod has its small tapering part, over the point of which the line passes into tho water, secured on a kind of swivel joint, connected to a spring, in such a manner that when the fish bites on the bait, and pulls the line with a very small force, a small catch or trigger is liberated on the rod, and the outer end is thrown up, projecting the hook into the fish, and lifting up both line and fish. The inventor is quite a disciple of old Ik Walton, and has great experience combined with ingenuity in catching the finny dwellers of the briny deep.

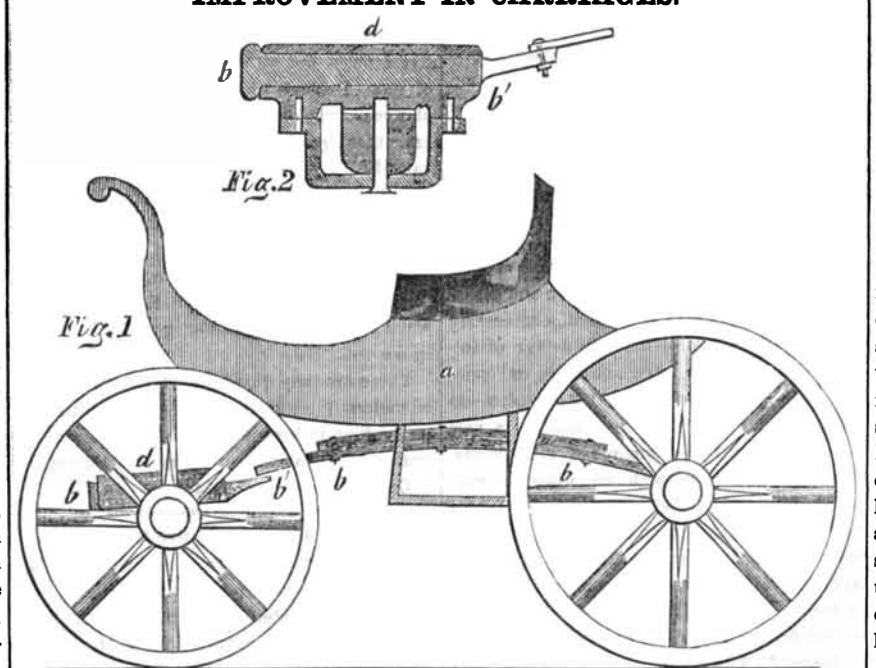
## MACHINERY FOR SAWING FIRE WOOD.




This figure is a perspective view of an improvement in feeding apparatus for sawing firewood. The inventor is Archibald Winter, of Rondout, Ulster County, N. Y., who has taken measures to secure a patent. The nature of the invention consists in the employment of a series of endless chains provided with hooks, so arranged as to convey the faggots of wood to one or more circular saws, and to carry away the wood to any convenient place. A B are strong side sleepers, and D is a strong wooden frame. *a a a a* are sprocket wheels, secured on shafts, and *b b b b* are endless chains revolved by them. These chains are constructed with a number of hooks, E E, in rows, to carry forward the billets of wood, *d d*, and hold them to the action of the three circular saws, as represented, and then carry them forward and discharge them into a proper receptacle at the back of the machine. O O are adjusting screws for tightening the endless chains by moving the bearing boxes of one shaft of the sprocket wheels. G is the driving shaft. By a band passing over pulley, K, it drives the main spindle which has the sprocket wheels on it, and thus moves the feed chains and carries forward the billets of wood. I is a gear wheel which by meshing into the pinion, J, revolves the shaft of the circular saws. This explains all the parts and motions of the machine. It is well adapted for sawing wood for locomotives or any other purpose for which wood is used for fuel. Any kind of power, steam, water, or animal may be applied to work it.

More information may be obtained by letter addressed to the patentee.

## IMPROVEMENT IN CARRIAGES.




A patent was granted on the 13th of last June to James L. Rowley, of Defiance, Steuben County, Indiana, for the improvements illustrated by the accompanying figures, 1 being a side elevation of a carriage, with improvements attached; 2, a vertical longitudinal section of the swivel joint. The improvement is principally adapted to light vehicles, such as four wheeled buggies. Instead of making the reach of the carriage of wood or iron, without springs, it is made of an entire spring, which is made to connect with the front axle so as to form a swivel joint. This combination and arrangement dispenses with a number of parts—bolts, screws, &c.—materially reduces the cost of construction, and produces ease of action in the carriage. *a* represents the light carriage body supported upon the spring reach, *b b*.—The spring reach consists of two springs attached to the hind axle, which meet and are firmly united together before they reach the front axle, as at *b'*. At the point of their junction, they are attached to a strong round bolt of iron *b*, figure 2, which passes through and plays freely in the socket, *d*, which socket is firmly secured to the front axle by iron straps, or otherwise. The front extremity of the bolt, *b*, is prevented from slipping back by a common head or nut. This swivel joint thus formed allows the vertical swing or play of the axle, while it forms a strong attachment for the spring reach.

The claim is for the swivel joint on the front end of the same, as shown and described.

More information may be obtained of Mr. Rowley, by letter addressed to him at his place of residence, named above.

### Sewing Machines.

About five years ago we do not believe there were over three or four sewing machines in use in our country, now they can be counted by thousands. They are found in the factories and in private dwellings, sewing the coarse bag and the most delicate piece of cambric.—These machines, since they were first introduced, have advanced towards perfection with a rapidity that is truly astonishing. So many patents have already been obtained for improvements, that it is very difficult to keep posted up in their progress; this is evidence of their importance, and at the same time, it is a sign that applications of them for various purposes, demands new modifications, devices and arrangements.

Application has just been made for a patent by Charles Parham, of Philadelphia, on the sewing machine combining two threads—a shuttle and needle—the object of which is to dispense with the shuttle race, in order to obviate the friction attendant on its use, and which requiring oil to lubricate it, often soils delicate articles. He employs a shuttle carrier in which the shuttle fits, so as to allow it to pass through the loop, but requires no movement independent of the one which is given to the carrier, and which requires no fixed guide to produce friction, excepting on the side which does not come in contact wtih the threads.

### Newly Invented Clock.

S. W. Botsford, of 52 Dey street, this city, has invented and shown us a clock for the China and Japan markets. It seems especially adapted to its purpose. The dial plate has the Chinese Hoang characters and the Japanese numerals. The hands move differently from our clocks, making a diurnal motion in 12 Chinese hours. The clock strikes from one to twelve; thus, when the minute hand leaves the meridian mark or character, it comes down to where the figure 6 is in ordinary clocks and strikes one for the Chinese odd hour; the hand goes up to meridian, and strikes two, and continues to strike at any odd and even hour: at midnight both hands point directly down. This clock is ingeniously arranged, and simple withal, and by the introduction of Chinese characters and its cheapness, it will be within the reach of the lower classes and easily understood, whereas our ordinary clock, with its Roman characters, and different method of counting, render it useless, except to the highly educated, who could make the deduction and arrive at the time of day. The proper steps are being taken to secure a patent on the case, dial, and movement. Samples of the clock, which are well worth seeing, are on exhibition at Messrs. Coe & Co.'s, 52 Dey street.

### Manufacture of Iron.

The "Buffalo, (N. Y.) Democracy" of the 17th inst., gives an account of an improvement in blast furnaces, by G. Howard, of Ohio.

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# Scientific American.

NEW YORK, AUGUST 26, 1854.


### To Our Readers.

We take the present opportunity, according to our usual custom, of directing the attention of our readers to the Prospectus for our next volume, and also to the Prizes we have offered for the largest lists of subscribers. As we employ no traveling agents, we have for the past five years adopted this method as an inducement, to any person who desired, to labor in extending the circulation of the "Scientific American." Last year we offered 12 prizes—four hundred and fifty dollars; this year we offer 14—five hundred and seventy dollars. We consider this plan a fair, free, and honorable means of exciting an interest in the minds of many to do some good to themselves, their acquaintances, and us, by endeavoring to increase the number of readers to a paper devoted to American inventions, and the dissemination of reliable and useful information.

With respect to the cheerful reception which those who obtained prizes last year, met with, when soliciting subscribers among their acquaintances and brother mechanics, we would refer to their letters acknowledging the receipt of the amount awarded to each, which will be found on pages 150, 174, 182, and 205, this volume. We commend these letters to all who may desire to compete for the prizes now offered. Nearly all of those who obtained prizes last year, asserted, that it did not require much trouble to obtain them, they attributed their success to the popular character of the paper more than anything else.

To those who have heretofore exerted their influence in extending our circulation, either by obtaining lists, or inducing their friends to subscribe, we feel deeply grateful. A great number of those who obtained lists of subscribers last year, and previous years, acted the part of free, generous knight errants in the field of scientific literature. Our circulation is now far greater than that of any periodical published in the world devoted to such objects, and it is the only weekly paper of the kind published on our continent. It has now a circulation of 23,000 copies; a large number to be sure, but not so large as it should be by 33,000, according to our population: nor as large by 20,000, as we mean it shall be within three years. We are aware that the readers of such a paper cannot be so numerous as those for some other periodicals, because the cast of mind which feeds on sound, solid information, of a scientific and mechanical character, is more select than that which finds delight in light literature. We are of opinion, however, that in many places there are persons who only want to have the matter clearly brought under their notice, to become constant readers and subscribers to the "Scientific American." It is greatly to the credit of some villages in our country, containing but a small population, that they contain so many subscribers. Thus in Columbia, S. C., there are 139—the greatest number, we believe, for its population, of any village or city in the Union. In Jacksonville, Ill., we have 94; in Lancaster, Ohio, we have 80. We are positive that the constant readers of the "Scientific American" comprise the deepest thinkers and the most intelligent portion of the inhabitants in every place where it circulates; they must necessarily be so in order to feel interested in the scientific and mechanical subjects which are constantly brought forward for discussion.

Two more numbers, after this, will complete the present volume. We earnestly solicit subscribers to send in their names at as early a date as possible, in order that we may form a proper estimate of the number of copies with which to commence the next volume. We certainly anticipate a large accession of new subscribers, and relying on the kindness of good old friends we believe we shall not be disappointed. We have added improvement to improvement every new volume, and the next—Volume 10—we shall endeavor to make superior to all its predecessors.

### Models for the Patent Office.

Inventors will save themselves, ourselves, and the Patent Office an amazing sight of trouble if they will but obey the following instructions concerning the construction of models We have had no less than ten models refused by the Office within a month for being too large or too frail, and it will no doubt cost the inventors more than one hundred dollars to supply their places with those of suitable size and quality. The Commissioner is growing more and more strict every day, and if inventors wish to save themselves trouble and expense, they must follow the rules of the office. We again publish the rules of the office concerning models, and we *do* hope attention will be paid to them by those who are constructing models with a view of applying for patents:—

"The model must be neatly and substantially made of durable material, and not more than one foot in length or hight, except when a larger model is permitted by the Office for special reasons to be shown by the applicant. If made of pine or other soft wood, it should be painted, stained, or varnished."

"A working model is always desirable, in order to enable the office fully and readily to understand the precise operation of the machine. The name of the inventor, and also of the assignee (if assigned,) must be fixed upon it in a permanent manner."

"Models for the U. S. Patent Office must be fastened in all their different parts by other means than by glueing, as such will not endure the handling and atmosphere to which they are necessaily exposed."

### The New Patent Bill.

We understand from a reliable source that the Committee on Patents in the Senate have modified the Patent Bill reported by them, and have stricken out some of the objectionable features, as explained in the "Scientific American," page 341. This is certainly very gratifying intelligence, and we regret the necessity which compels us to ask the committee to a further pruning down of this curious bill—for curious it is that in this advanced age, our national Congress should attempt to saddle down genius with so incongruous a system, called "protection to inventors." We learn that in the main, no changes have been made in the amount and number of fees required on passing claims through the Patent Office. Now if the Committee desire to increase the Patent fee, why dont they come square up to the business and say it shall be thirty, forty, or fifty dollars, as the case may be, without attempting to deceive inventors by throwing in a batch of petty fees, from fifteen cents up to one hundred dollars, compelling them to carry around one of Dabol's Arithmetics in order to cypher out what amounts are expected of them. Simplicity and clearness ought to form the ground work of our patent system—let us have this or nothing.

### Patents in Great Britain.

Our London agents caution American inventors against the operations of parties in and about Washington, who act in concert with agencies in London, for introducing good improvements into Great Britain as soon as the patents are issued here. They mention one case where the inventor, upon reaching London, found to his great mortification that his invention had already been secured by another, who had received it as a communication from some one on this side. Cases of this character are represented as not uncommon. We have no personal knowledge upon the subject, and write upon the hint of our agents in London. It is a very dirty business to purloin the invention of another and we hope to hear no more of it. If well authenticated facts come to our knowledge, implicating parties in such transactions, we shall not withhold their names from the public.

### Fair of the American Institute.

This Institution has come to the conclusion of having no Fair this year. The last one entailed a heavy loss, but it was honorably managed. This is the first gap in the annual fairs of the Institute for twenty-two years. We hope it will be able to have a first rate one next year.

### Trimming Welts of Boots and Shoes.

The annexed views represent an improvement in an instrument for the above named purpose, for which a patent was granted to Lyman Clark, on the 13th of last June, and one half of it assigned to Joseph Sawyer.

Figure 1 represents the improved instrument, and figure two shows its application and the manner in which it is operated in contrast with the common instrument now used.

Fig. 1

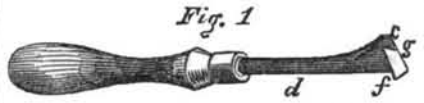
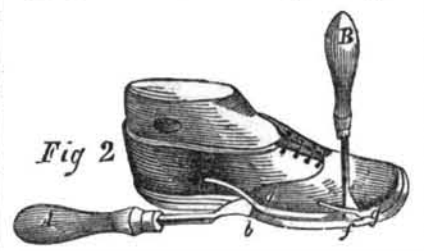



Fig 2




In pegged work it is desirable that the welt should show as thick as possible, while, at the same time, as there is but little wear upon it, it is generally made of inferior leather, and in order that it may be prepared for the head which it receives, it is necessary that its upper edge be pared evenly and smoothly. There are two ways in which this has usually been done. In the first method the welt is first hammered down, and the edge is then taken off with a shoe knife. This leaves a smooth and perfect surface upon the upper side of the welt, but is objectionable on account of the danger of cutting the upper leather of the boot or shoe. In the other process, which is the one commonly in use at the present time, the instrument, A, represented is employed. This tool has a small pointed guard, *a*, projecting from beneath the welting edge, *b*, and is used as follows:—The welt, in place of being thickened up by hammering, is laid over towards the sole by the welt bone, which is inserted between it and the upper leather. This is necessary in order to enable the pointed guard to pick up the edge of the welt. The latter is then trimmed by applying the instrument as shown. The point, *a*, however, is very liable to injure the body of the shoe, particularly at the place where it is seen applied. After the welt is thus pared, it is again to be thickened up by hammering, which again produces a rough surface, which is afterwards made smooth by the use of the Rand file; this instrument, as well as the paring tools, is very liable to injure the upper leather, and it is estimated by the largest manufacturers that all their job work is deteriorated to the amount of ten or twelve per cent. upon its value by the various instruments used to trim the welt. To remove all these inconveniences, and to produce an instrument which cannot possibly injure the upper leather, and which may be operated upon the welt after it is hammered down, thereby leaving a smooth and perfect surface, without the use of the Rand file, is the object of this invention. Figure 1 is a view of the instrument; *c* is a broad flat guard formed by the extension and flattening of the shank, *d*. Nearly at right angles with the guard is the blade, *f*, having its cutting edge at *g*, set at an angle somewhat less than a right angle with the surface of the guard, for the purpose of pressing the welt down as it is cut. The instrument is operated as at B, in figure 2. The guard, *c*, being inserted beneath the welt which is previously hammered down, and the tool is worked rapidly without the possibility of injuring the upper leather even in the most careless hands, while the surface which it leaves is smoother and more even than is produced by any other method of trimming the welt.

More information respecting this instrument may be obtained of Sawyer & Clark, South Royalston, Mass.

### New Motive Power.

An ingenious Swedish machinist, P. Lagergreen, has invented a new power engine, intended to supersede steam. The moving force is the pressure of the atmosphere, which acts on a vacuum in a copper reservoir, connected with two cylinders provided with pistons, as in a common steam engine. The vacuum in the reservoir is produced by the admission of a certain quantity of alcohol and of atmospheric air, each time the machine makes a stroke. Explosive air is hereby produced, is fired at each turn, and instantly burns away; one of the pistons being at the same time opened, an atmospheric pressure is obtained equal to fifteen pounds on the square inch. This machine is light and simple, and its fuel (alcohol) takes little space. Whether it will be superior to or cheaper than steam, is a question others must decide.—[N. Y. Times, Aug. 11.

[The above we have seen copied into a number of our cotemporaries. It is neither a new motive power, nor does it possess a grain of modern science, in the line of inventions, to supersede steam. The same plan has been proposed over and over again. A patent was granted in 1823 to Samuel Brown, of London, for a gas vacuum engine, the vacuum of which was produced by mixing hydrogen and oxygen in a cylinder, and igniting them under a piston to produce a vacuum. The hydrogen of the alcohol referred to in the above is mixed with air, then ignited for the same purpose. It has also been proposed a number of times to ignite gunpowder under a piston to produce a motive engine, and Commissioner Ewbank suggested the benefits that might be derived from annihilating air under a piston, but the query was how to do this;—that was the rub.

### American Carriages.

The well known coach manufactories of the Messrs. Abbott and Lewis Downing, at Concord, N. H., employ 300 men, and turn out each year about one hundred and fifty stages, and nine hundred express and other wagons. These are ordered from every part of the United States, and even South America and Australia—the greatest demand being from the newly settled States of our Great West.—Through the agency of the Messrs. Abbott, a stage company has been formed to run a daily line of coaches between the cities of Valparaiso and Santiago, in Chili, and in their establishment are several stages, elegantlyfinished intended for this route

### Miller's Car Brake.

The Detroit papers give an account of some experiments which were recently made near that city with the steam brake of Henry Miller, of that place, on a train of cars. When the train of cars was running at the rate of 20 miles per hour, it was brought to a dead stop by the brake in a distance of 15 rods without reversing the engine. When the train was going with a velocity of 30 miles per hour, it was stopped in a distance of 30 rods in 20 seconds of time. These were excellent tests of the working of this brake.

### Dederick's Parallel Press.

On page 384, in the description of Dederick's Press, it was stated that it had been applied as a cloth press; this was not correct.—It is a new press which he has invented, that he has applied to the pressing of cloth, and which acts vertically. Messrs. Deering & Dederick make good machines at their Agricultural Works, corner of Bleecker and Franklin Streets, Albany, N. Y.

### $570 IN PRIZES

The Publishers of the "Scientific American" offer the following Cash Prizes for the fourteen largest lists of subscribers sent in by the 1st of January, 1855.

**$100 will be given for the largest list,**

| | |
|---|---|
| **$75 for the 2nd.** | **$35 for the 8th,** |
| **65 for the 3rd,** | **30 for the 9th,** |
| **55 for the 4th,** | **25 for the 10th,** |
| **50 for the 5th,** | **20 for the 11th,** |
| **45 for the 6th,** | **15 for the 12th,** |
| **40 for the 7th,** | **10 for the 13th,** |

**and $5 for the 14th.**

The cash will be paid to the order of each successful competitor; and the name, residence and number of Subscribers sent by each will be published in the "Scientific American," in the first number that issues after the 1st of January, so as to avoid mistakes.

Subscriptions can be sent at any time and from any post town. A register will be kept of the number as received, duly credited to the person sending them.

☞ See new prospectus on the last page.

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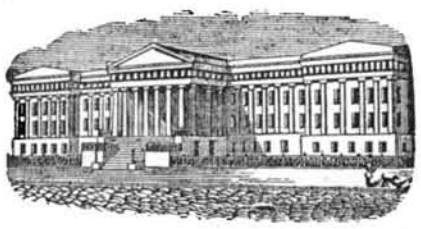

[Reported Officially for the Scientific American.]

## LIST OF PATENT CLAIMS

### Issued from the United States Patent Office

FOR THE WEEK ENDING AUGUST 15, 1854.

CLOSING THE MOUTHS OF BOTTLES, &c., AIR-TIGHT—Robert Arthur, of Washington, D. C.: I do not claim any method of rendering vessels air-tight by the aid of caps or stoppers screwed or cemented in places: but only the vessel so contrived as to be made tight by means of a groove or receptacle containing a yielding medium which is to be penetrated by the caps or cover, with the receptacle so contrived that the bottle may be inverted to pour out its contents without spilling the liquid or yielding medium from the groove or receptacle, as set forth.

PEGGING BOOTS AND SHOES—J. A. Bradshaw, of Lowell, Mass.. I claim, first, the combination with the grooved wheel of the arm, for the purpose of presenting the pegs to the wheels longitudinally, arranged and operated as set forth.

Second, the application of the grooved wheel in combination with the burr wheel and tube, as described.

Third, the levers, pawl, and ratchet, on a grooved wheel, or their equivalents, arranged and combined as described.

Fourth, the clamps or forceps to receive the peg from the wheel, in combination with the detectors, the punches, and the double channel, for the purpose of insuring the proper presentation of the peg with the point downward.

Fifth, the combination of the forceps, the wedge-shaped driver and the adjustable stop screw, as set forth.

Sixth, the apparatus for holding the boot or shoe during the operation of pegging, consisting of the plate revolving upon the ring of the plate, and having the clamps, or their equivalents, the whole arranged as set forth.

Seventh, the combination of the hinge joints, the shaft, and the levers or their equivalents, as and for the purpose set forth.

GLASS MOLDS—Wm. Brooke, of Jersey City, N. J.: I claim the shoulder when used in combination with the cap plate and plunger, as set forth.

HOT-AIR RANGE AND SIDE OVENS—John H. Cahill, of Philadelphia, Pa: I do not claim passing fresh hot air into an oven, nor radiating flues applied to a range, with an elevated side oven independently of their peculiar mode of construction and arrangement.

But I claim, first, the use of the fresh hot-air pipe, when constructed and combined with the hot-air chamber, and elevated side oven and vent hole, especially for the purpose of preventing the fumes or vapors arising from the substances being cooked in the oven when in operation, from being drawn or forced out by the oven into the hot-air chamber, as described.

Second, I claim making the elevated side oven flues of square section, and united together by the partitions, as described, so as to leave equal and flat surfaces in the oven and hot-air chamber, arranged so as to radiate heat therefrom on all sides of the oven, excepting the door side, and also so as to radiate heat into the hot air chamber from the flues on four sides of the oven, as described.

RAILROAD CAR BRAKES—M. P. Coons, of Brooklyn, N. Y.: I do not claim any particular device, or the construction of any plan of leverage for the purpose of operating the brake, as that may be accomplished by various modes.

But I claim a lever-form brake, which, when in action, shall bear and brake simultaneously, both upon the wheels and rails, the friction upon the latter supplying the braking force upon the former, and the whole being adjustable and self-acting through the combined agency of an eccentric or cam, bearing, or resisting point between the brake and car, all for the purpose set forth.

TURNING IRREGULAR FORMS—A. D. Crane, of Newark, N. J.. I do not claim the principle of the cutting irregular surfaces by means of a cutter or a series of cutters revolving in contact with the materials to be cut, said materials also revolving in the same direction with the said cutters.

But I claim the cutting wheel combined together, guided, and controlled, as set forth.

RAKES—D. M. Cummings, of Enfield, N. H.: I claim the mode of fastening the head of the rake to the handle or tail by the use of the head fastener containing the socket, and the clasp, in combination with the handle, the head, and the screw, as set forth.

HAND PRESS—B. F. Day, of Philadelphia, Pa.: I am aware that levers and toggles have been used in a variety of presses; these I do not claim.

But I claim so arranging the levers, toggle, and follower, that by grasping the handles of the levers in the hand of the operator, the platen shall be brought down hard upon the bed, the whole being arranged for the purpose of a seal hand press, as set forth.

SECURING HUBS TO AXLES—Cook Darling, of Utica, N. Y.: I do not claim the holding on the wheel by means of a groove encircling the front end of the axle, because that feature of the fastening has been used before:—neither do I claim operating the guard plates, or collar closing over the groove by means of the key in front.

But I claim the combination and arrangement of the several parts, viz, the axle with the conical end, the guard plates, and the means of operating the same by the use of the key in front.

PUNCHES AND DIES FOR PUNCHING WATCH HANDS—A. L. Dennison, of Roxbury, Mass.: I claim the construction and arrangement of the punch and die, as set forth, the punch being of elementary parts, formed to the same figure, or nearly so, in their cross section throughout their whole depth, and braced between blocks or clamps made to the figure of the article to be formed, by which construction the most delicate and complex punch can be formed in a cheap and expeditious manner, and readily renewed or changed, and being throughout of the same magnitude, are readily and perfectly hardened, without injury, which has heretofore been found an insuperable difficulty in punching small delicate work.

PLOWS—Joshua Gibbs, of Canton, Ohio: I claim, first, making the working surface of the mold board in the form of a section of the interior surface of a hollow cylinder, the center or axis of said cylinder being parallel or nearly parallel horizontally to the base of the mold-board or bottom of the plow as described.

LAMPS—Joseph Harris, Jr., of Boston, Mass.: I claim the arrangement and construction of the lamp, as described.

SAFETY APPARATUS FOR STEAM BOILERS—A. H. Judd, of St. Louis, Mo.: I claim passing the stem of the valve through an enlargement in the supporting tube, by which I am enabled to give short bearings to said stem for the purpose of preventing it from becoming fastened in its bearings by oxydation, or the action of the heat upon the earthy matter driven through the same, when the valve is opened, and also for the purpose of producing a fuller and clearer sound, when the valve is opened, and also for the purpose of producing a fuller and clearer sound, when the valve is opened, than is produced by the escape of steam through the ordinary gauge cock.

I also claim removing portions of the sides from that part of the valve stem which passes through its inner bearing aperture, so as to leave narrow bearing surfaces to guide and steady the valve, for the purpose of preventing said valve stem from becoming fastened within its inner bearing aperture, and also for causing a large volume of steam to escape and give the alarm when a lack of water in the boiler or excessive heat of the steam causes the float to sink, as set forth.

I also claim combining the valve stem with the float, in such a manner that when the float shall sink and open the valve, the valve stem may be detached therefrom for the purpose of again closing the same by simply giving a partial turn to said valve stem by means of its handle, as described.

I also claim giving an alarm whenever the steam in the boiler is allowed to accumulate to a dangerous degree of pressure, by placing a plug of fusible alloy in an aperture in one end of the float which is connected with my improved arrangement of gauge cock, as specified.

GRINDSTONE FRAME—J. L. Lord, of Chester, Ct.: I claim the grindstone frame, constructed as set forth, that is to say, cast in two pieces of such form that when put together, as described, it shall furnish the bearings for the shaft and friction roller, both of which shall be protected from injury and from dust or water, and also from being displaced from their positions in the frame, either by accident or design.

RAILROAD CAR BRAKES—T. G. McLaughlin, of Philadelphia, Pa.: I am aware that many of the devices described are well known and in common use, particularly that portion which relates to the operation of the brakes by hand, I therefore do not claim them.

But I claim a sliding rod of the peculiar form described, that is to say. I claim forking the sliding rod in such a manner as not to interfere with the king joints and bumpers, but to have a longitudinal motion separated from and independent of both.

I also claim the slotted connecting rods attached to the sliding rod, for causing the automatic action of the brakes without interfering with the ordinary hand brake, or the hand brake in its action interfering with or producing any movement of the sliding rod, as specified.

HARROWS—Jacob Myers of Powhatan Point, Ohio: I claim the triangular wings upon the turned up-portion of the teeth, with their land sides so inclined as to have a tendency from the plant when the implement is moving forward, constructed and arranged as set forth, for pulverizing the earth and otherwise facilitating the cultivation of cotton.

LIME KILNS—Robert Neisch, of New York City: I claim, in combination with the fire chamber, the air-conducting passage for the purpose of bringing in the air from above the fire, as described.

I also claim, in combination with the arched fire chamber, the inclined and curved berth for concentrating the fuel and throwing the flame or heat towards the stack, as described.

UNLOADING COAL AND OTHER CARS—A. Patrick, of Alleghany Co., Md.: I claim the manner of liberating the pin which holds the door of the car by a lever attached to said pin, calculated to lift it and open the door when the car enters upon a tilting frame.

Also I claim the iron bar upon a tilting frame forming a hook to hold the car: and at the same time a means of lifting the lever to open the door of the car, or in other words, the combination of this lever and tilting frame to facilitate the unloading of mine cars.

SEWING MACHINES—S. H. Roper, of Worcester, Mass.: I claim the groove tube or thread passage, in combination with a needle made to operate a thread, as described, said passage being for the purpose of supporting the thread and preventing it from kinking or injuriously springing back or towards the cloth immediately after the release of the thread from the needle, as described.

I do not claim the invention or employment of a slide or an equivalent contrivance to close down on the barb and over the opening of the hook of a needle; nor do I claim the application of such closing slide to a hook needle, in such manner that said slide shall play or move in a groove made in the side of the needle, as the same does in the machine patented by William Wickersham, on the 19th April, 1853.

But I claim the mode of applying the closing slide to the needle, that is, the making the shank of the needle tubular, and inserting the closing slide within the same, whereby such closing slide is better protected from accident, or being broken by catching in the cloth or thread, or otherwise broken, as it is liable to be when made to run in a groove formed in the side of the needle.

And in combination together and used with a hook needle, I claim the two thread benders, as made to operate on the thread, and lay it in the opening of the needle, as specified.

And in combination with the thread benders, I claim the lip or nipper and the spring nipper, the same being for the purpose of seizing the thread, and enabling the needle to draw it closely into the cloth, as specified.

I also claim the above described improved mode of connecting the two connecting rods to one crank pin, viz, by the projections from the rods and the covering tube or ferrule, as specified.

TURN-TABLES—J. C. Robie, of Binghamton, N. Y.: I claim, first, balancing the platform of the turn-table upon a transverse central shaft or other suitable axis resting upon the roller carriage in a line intersecting the line of the axis upon which the turn-table rotates, in such a manner that the table, when in an horizontal position, is elevated or has its rails above those of the track, to admit of the free swing of the table over its under supports or bearings, and so that the table may be rocked with facility from its center, or tilted to bring the ends of its rails on either side of the balancing shaft into line or level with the rails of the track, for the purposes set forth.

Second, I also claim the manner described of holding the table steady at its horizontal set whilst rotating, and tilting or depressing it on either side of the balancing axle when required, by means of the cams arranged to bear upon the roller carriage, and operating in connection with the roller carriage and table, as set forth.

MACHINES FOR CUTTING IRREGULAR FORMS—O. L. Reynolds, of Dover, N. H.: I claim combining a series of patterns, and the chucks for the blocks, with each other and with the collar, the vertical slides, the pawls, the ratchet wheels, and the recesses in the arms, or their equivalents, in such a manner that said series of patterns and blocks shall have corresponding compound rotary and longitudinally reciprocating movements imparted to them, as set forth.

I also claim supporting the weight of the cutter wheel upon a series of rotating and longitudinally reciprocating patterns, when said patterns are combined with chucks for a series of blocks, in such a manner that corresponding movements shall be imparted to said patterns and blocks, and said blocks be so situated as to be operated upon by the cutters, as set forth.

COMBING WOOL—Chas. G. Sargent, of Lowell, Mass.: I claim, first, drawing out and stapling the material, as set forth, previous to commencing the combing operation.

Second, I claim the continuous motion of the nippers or other parts which operate upon the wool, whereby I am enabled to keep a number of them in operation at the same time, the different steps in the process proceeding simultaneously upon different portions of the material without the necessity of interrupting any one of them for the performance of another, and without retrograde motion of any of the parts of the machine.

I claim the method described of opening and closing the nippers, by means of the cam, O, in combination with the cam, Q, or its equivalent, whereby the nippers are closed suddenly upon the wool, whatever may be the rate of motion of the nipper cylinder.

RAILROAD CAR WINDOWS—George Spencer, of Utica, N. Y.: I claim the combination with the side of a car of a revolving window, consisting of two separate circular sashes connected by hinges, so that one sash may be opened to its full extent, and having a small part of the circle cut off, so that by revolving it upon its center a small opening may be made at the forward part of the window, whichever way the car may be moving, the residue of the window remaining at the same time covered, as described.

FIRE ARMS—W. A. Sweet, of Pompey, N. Y.: I claim, producing the compound longitudinal and vibratory movement of the breech, and afterwards immovably securing it in contact with the barrel, by a single forward and return motion of the actuating lever, viz: by means of the cam-piece, provided with a shoulder, a cam surface, and a wedge surface, against which said lever acting successively, substantially as herein described, produces respectively the backward longitudinal and vibratory motion of the breech, then the forward longitudinal motion thereof, and finally presses it against the barrel with immense force.

I also claim the link, one end of which is hinged to the lever, and the other end provided with a slot that receives a pin on the hammer dog, when arranged and operated as specified, for the purpose of cocking the gun by the action of the actuating lever in operating the breech, while at the same time the hammer remains free to be raised in the ordinary way without moving said lever. I also claim the arrangement of a broad cavity in the face of the hammer with a sharp edge on its rear side, in combination with the compound movement of the breech, and the properly regulated motion of the hammer, substantially as herein described, for the purpose of removing the exploded caps from the nipple. I also claim the combination of the mouth piece attached to the extremity of the feeding tube, and provided with a notched tongue, projecting forward from one side, and of the short tube, which is held in front of said mouthpiece by a spring, and has a wedge shaped projection extending forward from the side opposite to the tongue, when the whole being situated and arranged in such a manner as to receive the nipple and supply it with a cap whenever the breech is fully opened, as specified.

SEED PLANTERS—I. T. Wait and L. P. Wait, of Waterloo, S. C.: We are aware that two shafts have been used before, one or both of which have been operated by gears or some equivalent device, therefore we do not claim the agitating and delivering shafts independent of the means we use to operate them, but we claim making one wheel larger than the other, and putting them on separate axles, so as to make one operate the burr or apparatus which stirs the seed, and the other the burr or apparatus which delivers the seed, as described, without the aid of gearing or other equivalent devices.

HORSE RAKES—Moses D. Wells, of Morgantown, Va.: I am aware that various forms of spring bars are in use for holding the teeth of horse rakes. I therefore make no claim to spring bars, nor to anti-friction rollers of themselves. But I do claim the described method of regulating the action of the rake teeth, by the reverse anti-friction rollers, arranged and operating as set forth.

INSULATORS FOR LIGHTNING RODS—Timothy U. Webb, of Jersey City, N. J.: I do not claim making the outside of the insulator with a horizontal groove in the middle, and a flange on each side of the groove.

But I claim making the inner surface convex in the manner and for the purposes described.

PRINTING LONG-NAPPED FABRICS—Wm. A. White, of Roxbury, Mass.: I claim the described process of coloring and finishing a napped fabric after the fibers have been laid in one direction by the ordinary or common process of finishing them; the said process consisting in raising and turning the fibers over and down upon the cloth in a contrary direction, and printing figures or devices upon them in one or more colors, and finally returning the fibers or restoring them to their original position or direction, as set forth.

GOLD AMALGAMATORS—A. S. Wright, of San Francisco, Cal.: I claim the method described for amalgamating gold in hollow revolving cylinders upon horizontal axes, said axes, journal, or trunnion being hollow to admit the pulverized quartz or ore from one cylinder into another, the in ets through the trunnion being smaller than the end of the outlet; the said cylinders connected by flanges or pipes with grooves turned into the axes or trunnions, and rings fitted into the grooves and covered by the flanges: the whole being so connected as to make them water or steam tight, and so arranged as to give a fall of about six inches to each cylinder, said cylinders containing rollers, knives, burnishers, and other analogous arrangements to produce friction, scour the ore, and produce the amalgam with quicksilver, the whole arranged and combined, as set forth.

PEGGING BOOTS AND SHOES—William Kidder, (assignor to William Kidder & Nehemiah Hunt,) of Newburyport, Mass.: I claim the combining with the handle of the machine, and the machinery for driving the pegs, a feeding mechanism by which under the movement of the awl and stock, the feeding or regulating of the feeding of the machine along on the sole is effected.

I also claim the combination of mechanism by which the feeding of the machine is regulated while the machine is held in the hand and pressed against and along on the edge of the sole as stated, the said combination being the serrated wheel, the spring catch, the slide, and the cam on the awl driver or stock.

I also claim the combination of the movable or sliding peg receiver with the pegwood carrier, and the awl driver or stock, the same being applied and made to operate as stated.

WINNOWERS—Henry H. Beach, of Chicago, Ill.: I claim the board (delivering the grain to the front edge of the blast) in its arrangement with the drum and inclined planes, as set forth.

DESIGN.

COOKING STOVES—Francis Heller & Elias Young, of Cincinnati, Ohio.

### Great Trial of Reaping Machines.

A trial between a Reaping Machine of J. L. Wright, of Chicago, Ill., and one of J. H. Many's of Rockford, Ill., took place at Squaw Prairie, Ill., on the 26th of last month. The trial was for a prize of $1,500. The contest occupied parts of five days: the judges were M. L. Dunlap, H. Miller, and R. Emerson, Jr. The machines are known by the names of "Atkin's Self-raking Reaper," (Wright's, which has been illustrated in our columns,) and the adjustable combined Reaper and Mower of Mr. Many. Each machine was to cut 20 acres in one day, and the points to be decided were, the relative amount of manual labor in Raking, Binding, and Shocking. We have received the report of the judges,—but the result of the trial and the report are anything but satisfactory. The machines cut down their 20 acres each per day, with ease, and they did their work well; but the judges made the trial a drawn game. Each machine has superior qualities of its own, and the report speaks of both with enthusiasm.

### A Great Railway Bridge.

Some of our Western exchanges speak of the bridge of the Illinois Central Railway Company, over the Illinois River at La Salle, as fully equal to any structure of the kind in America. It extends across from bluff to bluff, is more than half a mile long, and seventy feet high, supported by seventeen massive stone piers and the abutments. The estimated cost is $750,000. The lower floor is for common vehicles, the upper for cars. Spanning, as it does, the entire valley of the Illinois, it can be seen at a great distance up and down the river, and the effect is exceedingly imposing. The American railway companies at the present day, build works which in ancient times would be considered monuments that required the whole available wealth of a nation to construct.

### Sulphuric Acid—Phosphate of Lime—Chemical Ignorance.

The French Academy of Science at a recent sitting received a communication of a discovery which may become very advantageous. In some experiments made at the laboratory of the Sorbonne, the operator has succeeded, by an ingenious employment of chlorohydric acid acting in presence of charcoal, in decomposing the sulphate of lime (plaster) in such a manner as to extract sulphuric acid from it, and to obtain from bones, either first transformed into animal black, or in a natural state, all the phosphorus they contain. With regard to the former of these results, the manufacture of sulphuric acid by means of sulphate of lime is one of the great desiderata of practical science, and there will be from the latter a great advantage in diminishing the price of phosphorus by a more simple and rapid production."

[We have seen the above paragraph in at least a dozen of our exchanges. Our cotemporaries should be exceedingly careful of such notices. The ingenious employment of "hydrochloric acting in the presence of charcoal in decomposing the sulphate of lime," is certainly a puzzler. The use of hydrochloric acid to obtain sulphuric acid from plaster of Paris would be a very foolish operation, as it would be using a dear to obtain a cheaper acid. Sulphuric acid is now used to decompose bones, to render them soluble in water, and how in the name of science and common sense the above-described *new* discovery can be a *desideratum*, as stated, of practical science, and diminish the price of phosphorus, is more than we can conceive. The whole paragraph exhibits a great amount of chemical ignorance.

### To Destroy Rose Bugs.

MESSRS. EDITORS.—Under your "Scientific Memoranda" head of the 29th ult., I notice a method for destroying the rose bug, which, though doubtless an effectual remedy, is not always to be obtained, and if obtained must have a limitation in quantity. May I suggest a remedy that I have used with satisfactory results for many years, which is within the reach of all, without limitation of supply, and in point of economy to be commended to consideration.

Air-slacked lime is my remedy, and I apply it as follows, viz.:—I attach a sieve, (with rather coarse meshes) to a common cane fishing rod, the elasticity of which aids materially in sifting the lime upon the vines, trees, &c, and at night before the dew falls to any extent, sift it upon the foliage infected with the insect, and have never had occasion to repeat the application more than once, or been troubled a second time the same season. By this simple process I have saved my roses, grapes, and trees, while my neighbors have lost all.

Yours, B. T. E.

Boston, Mass., July 29th, 1854.

### Boiler Feeder.

On page 323, (June 13) there were published the claims of a patent for an improvement in feeding and regulating the hight of water in steam boilers, granted to H. C. Sergeant, of Cincinnati. Having been inquired of regarding the nature of the invention, we would state that it simply consists of an arrangement and combination of valves and a float within a box, which has means of communication with a reservoir of water and with the steam and water spaces of the boiler, by means of which the boiler is continually supplied with water from the reservoir, and the desired level is thus maintained.

### Bad American Flour.

The Belfast "Mercantile Journal," an Irish paper, asserts that American flour is now losing its character in the Liverpool market, and that it is inferior to the French. It asserts that No. 1 is a disgrace to American millers. We regret this exceedingly, and hope it is not true. Our millers must not permit their ancient fame to be thus depreciated.

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## TO CORRESPONDENTS.

W. H. D.,of Ct.—We have seen attachments to pianofortes for turning the leaves of music, operated by a pedal, but yours may be different from the one we have in mind.

I. S., of O.—Fusible alloy, we think, has been used for the purpose you specify, but if it has not, the use of it for that purpose would not be patentable.

M. W. Jr., of Cala.—Glass is an old device for bearings on light machinery and its adaptation to heavy work would not be patentable. Sewing machines are so numerous that it is difficult telling whose is the best for certain work. See advertisement in another column for a good machine.

S H., of Ill.—Your sketch presents the well knowu machine of Blanchard for turning irregular forms, and is not patentable.

J. B., of Pa.—The sketch of the smut machine you enclosed is as familiar to us as that class of machines themselves—nothing new in it.

L. W. N., of Mass.—The sample you have sent us of dust does not contain any gold. The dust of gold is easily detected; it becomes malleable with the blow of a hammer: is ductile, and not brittle, and is generally of a dull color in comparison with the glassy specks in your dust.

J. A. L., of Ill.—Poultices of linseed meal are the best remedies that we know of for boils. We do not know of any remedy for your pump; the work is heavy because it is just lifting the water thirty feet high, and it is no easy job to lift three pailsfull that hight.

S. C. B, of Phil.—Yours has been received and will meet with attention.

I. C., of Vt.—We agree with you as to the cause of the boiler explosion at the Manchester Lumber Company's Works; it was over-pressure. In some boilers a small plate has been applied, the strength of which is placed below that of the boiler, so as to give way by pressure above the standard. In several instances this has been successful.

I. B. C., of Md.—Parker's water wheel is undoubtedly as good as any in use. There are conflicting opinions and interests in regard to such questions. Experience, however, is a good teacher, and Parker's wheel has had a fair share of it. Other excellent wheels can be procured, but as you ask about this particular one we speak of it only. It may not be as good for your privilege as others. A machine moved by clockwork for keeping away insects is not new, but quite old.

John Flynn, St. Louis, Mo.—wishes to obtain information about a drawing instrument called the "Eidograph," invented by Prof. Wallace, of Edinburg. Can some one inform him about it?

S. P. W., of Ohio.—You are liable for the use of the ventilating chimney since the issue of the patent, unless you can prove yourself the original inventor.

H. T. B., of N. Y.—The claims of the patent referred to are for a combination of elements and not for specific devices, independent of the combination. You can use the rotary cutter without danger, it is public property.

W. H. M, of Tenn.—Applications are examined and patents issued in the order in which they are classed, except in cases in which the claims so nearly resemble those undergoing examination, as to render an interference probable; in which case they are taken up and examined. You can sell your machines after filing an application, with safety, providing your invention does not infringe upon any machine already patented. You can sell prospective rights, but of course can give no title which will assure the party purchasing that the invention will be patented. Your third query must be made to some counsellor at law. An engraving of the style and size you specify would cost you about fifteen dollars.

W. Mc C., of Pa.—The government fees are the same to all citizens for patents, whether females or minors. Your father would have the control of your patent if you should obtain one, until you came to maturity.

J. R. A., of New York.—There is no doubt but that your plan for constructing and operating fire engines is new and patentable, but we should not like to say it will operate well. We would advise you to construct a model and let us see the operation of the machine.

J. T., of Tenn.—We lack faith in your apparatus for the cure of cholera, and therefore must decline inserting your remarks to illustrate your contrivance.

R. A. G., of N. Y.—Using plank or boards as a substitute for the concrete which forms the basis of the Russ or other pavements, would not be patentable.

W. F. R., of Pa.—If the novelty of your invention consists solely in the peculiarity of your cam, it is not patentable. A cam of whatever shape, for producing ever so novel a motion, is not the proper subject of a patent.

W. R. D., of Tex.—We do not engage in the purchase or sale of machinery, and have sent your letter to Mr. Hills, whose advertisement appears in another column, for him to reply to.

J. S. P., of Tex.—We have examined your cotton press, and we see nothing in it of a patentable character.

T H. M., of Ga.—If you will give the date of the patent you enquire about, we will try to give you the information solicited.

Z. B, of N. C.—We have amended your specification and returned it to the files of the office.

—, of Covington, Ky.—No signature to your letter—please repeat your requests again, as we have not preserved the letter.

T. McE. H., of Wis.—We have mailed your note to Mr. S., but do not know anything about his iron houses.

Money received on account of Patent Office business for the week ending Saturday, Aug. 19:—

T. M., of N. Y., $30; W. & T., of Del., $25; J. G. C., of Mass., $20; G. W. S., of N. J., $20; J. S. G., of Mich., $55; E. L. H., of N. Y., $30; A. D. R., of Mo., $30; A. E. of N. Y., $55; H. B., of Ct., $30; R. D., of Ct., $30; H. F. B., of Ind., $25; L. B. D. of R. I., $20; R. M. S., of N. Y., $30; H. & B., of Ill., $30; S. & B., of Mich., $30; E. C. F., of Ct., $25; F. & A. W., of Pa., $300; E. J. P, of Mass, $20; T. & W., of Mo., $10; J. W. S., of Ct., $7; C. C., of L. I., $25; E. W. R., of N. Y., $25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Aug. 19:—

B. H. W., Mo.; J. G. C., of Mass.; W. & T., of Pa; T. P. K., of Pa.; H. F. B., of Ind.; L. B. D., of R. I.; E. W. R, of N. Y.; C. C. of L. I.; E. C. F., of Ct.; C. A. R., of Iowa; J. W. S., of Ct.

# ADVERTISEMENTS.

### Terms of Advertising.

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| 8 " | $1 50 |
| 12 " " " | $2 25 |
| 16 " | $3 00 |

Advertisements exceeding 16 lines cannot be admitted; neither can engravings be inserted in the advertising columns at any price.

☞ All advertisements must be paid for before inserting.

## American and Foreign Patent Agency.

**IMPORTANT TO INVENTORS.**—The undersigned having for several years been extensively engaged in procuring Letters Patent for new mechanical and chemical inventions, offer their services to inventors upon the most reasonable terms. All business entrusted to their charge is strictly confidential. Private consultations are held with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Models can be sent with safety by express, or any other convenient medium. They should not be over 1 foot square in size, if possible.

Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents.

MUNN & CO., Scientific American Office,
128 Fulton street, New York.

**EUROPEAN PATENTS.**—MESSRS. MUNN & CO. pay especial attention to the procuring of Patents in foreign countries, and are prepared to secure patents in all nations where Patent Laws exist. We have our own special agents in the chief European cities; this enables us to communicate directly with Patent Departments, and to save much time and expense to applicants

**JAMES BOGARDUS**—Corner of Center and Duane streets, invites attention to the Cast Iron Buildings which he first introduced and patented. The mode of putting them together is the most simple and perfect of any yet known. Combining unequalled advantages of economy, strength, and durability, the most beautiful and graceful designs, which would be too costly in stone, can be produced in iron at a trifling expense. They can be taken down, removed, and re-erected without injury, and if the whole interior were destroyed by fire, the iron building would remain firm as ever. Mr. B. is prepared to carry out designs for public or private buildings, lighthouses, towers, &c., and refers to the following gentlemen, for whom he has already erected buildings:—Mr. A. S. Abell & Co., Sun Building, Mr. S. M. Shoemaker, of Adams & Co., and Mr. E. Larrabee, Baltimore; Mr. F. Coyle, and Mr. M. Shanks, Washington; Messrs. Tatham & Brothers, Beekman street, Messrs. Hopkins & Brothers, Barclay street, Messrs. H. Sperry & Co., Broadway, adjoining the Tabernacle, and Dr. J. Milhau, Broadway, New York. Others are cautioned against erecting or using these buildings without the consent of the inventor, as he is determined to defend his patent against infringement. 50 tf

**THE NEW BRICK MACHINE**—Is now in daily operation at my yard, on Locust Point. If driven by steam, the clay is taken from the bank, passed through a pulverizer, (which removes the stone,) into the soak pit, where it receives the water, thence to the machine, which is geared to make six and a half revolutions per minute, turning out five bricks each time, or 1,750 bricks an hour, including contingencies. Nine men and six boys, all common laborers, take the clay from the pit and place the bricks on the floor. If there be no stone the pulverizer is not required; the clay is then thrown into the pit, mixed with water, and after remaining all night is ready for use. Machine, $425; Pulverizer, $75, with right to work it.
50 2* FRANCIS H. SMITH, Baltimore, Md.

**NEW PATENT FLOUR AND GRAIN MILL**—Patented June 6th, 1854. The subscriber is finishing the following mills: 8 twenty inch, price $100; 6 thirty inch, $200; 3 three feet, $300; 2 four feet, $400, and will pay $1,000 for any other mill as durable, simple, economical of power, which will grind as much from one dressing, which will heat the flour and meal as little, and is as easily kept in order. Cuts sent to post-paid applications, and liberal commissions allowed to agents for cash orders. EDWARD HARRISON, New Haven, Conn., July 24th. sole owner of all interest in the patent right. 50 9*

**MACHINISTS TOOLS**—SHRIVER & BROS., Cumberland, Md., (on B. and O. Railroad, midway between Baltimore and the Ohio River,) manufacturers of Lathes, Iron Planers, Drills and other machinists tools. 50 6m*

**THE SAWYER'S PRIZE**—I beg to call attention to the engraving and description of my improved Gate for re-action water wheels, as published in No. 48, this volume, Sci. Am. The invention is secured by patent, and I am desirous of selling rights. It is a valuable improvement, and offers a good chance to those who wish to make a good investment. Address me, Viroqua, Bad Axe Co., Wis, H. L. TURNER. 50 tf*

**THE NEW BRICK MACHINE**—If driven by a horse the clay is thrown into heaps, and each successive layer saturated; after remaining in soak all night it is shovelled into the machine. They were formerly built of two sizes, four and five mold. By a recent improvement the speed of the shaft is increased without changing the gait of the horse, and thus the smaller size can make 1000 bricks per hour, worked by four men and four boys. It is liable to no accident except from stone, which is apt to breax a mold. Price $275. For further particulars in a pamphlet containing full instructions on brick burning, address FRANCIS H. SMITH, Baltimore, Md. 50 2*

**MACHINERY.**—S. C. HILLS, No. 12 Platt-st., N. Y dealer in Steam Engines, Boilers, Iron Planers Lathes, Universal Chucks; Power, Hand, and Ratchet Drills; Force and Suction Pumps; Johnson's Shingle Machines; Woodworth's and Daniel's Planing Machines; Dick's Presses, Punches, and Shears; Mortising and Tennoning Machines; Belting; Beal's Cobb and Corn Mills; Harrison's Grist Mills; Mill Stones Grindstones, &c. Letters, to be noticed, must be post-paid. 27tf eow

**WANTED**—In a large Woolen Mill in Philadelphia, an experienced Woolen Dyer of good character, perfectly sober, and married,—one who can dye to any shade of color that may be required, with certainty, and keep to a shade without varying, for any length of time. None others than such as above need trouble themselves to apply. Wages liberal. Address with particulars P. Q. R., No. 18 Chesnut street, Philadelphia. 50 2*

**NORTHVILLE MACHINE WORKS**—Manufactory of Machinists Tools, consisting of Engine Lathes, Power Planers, Hand Lathes, Engine Lathe for turning chair stuff, all of the most improved patterns and quality of workmanship. Worcester, Northville, Mass.. August 9, 1854. TAFT & GLEASON. 50 1y*

**ESTABLISHED IN 1796**—Philosophical, Mathematical, and Optical Instruments. Our priced and illustrated Catalogue furnished on application and sent by mail free of charge. McALLISTER & BROTHER, Opticians, 48 Chesnut street, Philadelphia. 50 8

**PREMIUM SELF-ACTING DRILLING MACHINES**—Price $250—The best article made; to be seen at the Atlas Foundry, Jersey City, N. J. Address
49 2* JOHN F. WARD & CO.

UNITED STATES PATENT OFFICE,
Washington, July 25, 1854.

**ON THE PETITION** of Robert L. and Francis B. Stevens, of Hoboken, New Jersey, praying for the extension of a patent granted to them on the 25th day of January, 1841, for an improvement in "working the steam valves of steam engines when the steam is cut off and allowed to act expansively," for seven years from the expiration of said patent, which takes place on the 25th day of January, 1855:

It is ordered that the said petition be heard at the Patent Office, on Monday, the 1st of January next, at 12 o'clock. M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted.

Persons opposing the extension are required to file in the Patent Office their objections, specially set forth in writing, at least twenty days before the day of hearing: all testimony filed by either party to be used at the said hearing must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

The testimony in the case will be closed on the 22d of December; depositions and other papers relied upon as testimony, must be in the office on or before the morning of that day, the arguments, if any, within ten days thereafter.

Ordered, also, that this notice be published in the Union, Intelligencer, and Evening Star, Washington, D. C.: Evening Argus, Philadelphia, Pa.: Scientific American, New York, and Post, Boston, Massachusetts, once a week for three successive weeks previous to the 1st day of January next, the day of hearing.

CHARLES MASON,
Commissioner of Patents.

P. S.—Editors of the above papers will please copy, and send their bills to the Patent Office, with a paper containing this notice. 50 3

**OIL! OIL! OIL!**—For railroads, steamers, and for machinery and burning—Pease's Improved Machinery and Burning Oil will save fifty per cent., and will not gum. This oil possesses qualities vitally essential for lubricating and burning, and found in no other oil. It is offered to the public upon the most reliable, thorough, and practical test. Our most skillful engineers and machinists pronounce it superior and cheaper than any other, and the only oil that is in all cases reliable, and will not gum. The "Scientific American," after several tests, pronounced it "superior to any other they have ever used for machinery." For sale only by the inventor and manufacturer,

T. S. PEASE, 61 Main st., Buffalo, N. Y.

N. B.—Reliable orders filled for any part of the United States and Europe. 49 2*

**SEWING MACHINES**—CARD TO THE PUBLIC. The long protracted legal controversy between Elias Howe, Jr., and I. M. Singer & Co., has been amicably settled. Singer's celebrated Sewing Machines, which have had a constantly increasing sale, notwithstanding adverse verdicts and injunctions, may now be purchased and used without any question of the right to use them. We caution the public against buying any of the numerous inferior machines in the market. They all infringe one, and some of them several, of our patents, and those who attempt to use them will be prosecuted. I. M. SINGER & CO., 323 Broadway. 483*

**POWER PLANERS**—Those in want of a small Power Planer, which will plane 3 feet in length, 14 inches wide and 12 inches deep, and made in a superior manner, will please call at the office of the Meriden Machine Co., 15 Gold, cor. Platt st., New York City, or any communication by mail directed to the office or at the factory (West Meriden, Ct.) will meet with prompt attention. 48 3*

**LAWRENCE SCIENTIFIC SCHOOL**—Harvard University.—The next Term of this Institution will open on the 31st day of August, 1854, and continue 20 weeks. Instruction by Recitations, Lectures, and Practical Exercises, according to the nature of the study, will be given in Anatomy by Messrs. Bond, Botany by Prof. Gray; Chemistry, Analytical and Practical, by Prof. Horsford; Comparative Anatomy and Physiology by Prof. Wyman; Engineering by Prof. Eustis; Mathematics by Prof. Pierce; Mineralogy by Prof. Cooke; Physics, by Prof. Lovering; Zoology and Geology by Prof. Agassiz. For further information concerning the School application may be made to Prof. E. N. Horsford, Dean of the Faculty.
Cambridge, Mass., July, 1854. 47 4*

**METALLIC OIL**—In most of the Fire Insurance Companies of this city and Philadelphia, parties using Cumberland Brothers' Patent Metallic Oil, can effect insurance on their factories, &c., at the same rate of premium as if they used sperm oil. This privilege is extended to no other oil manufactured for lubricating purposes. For sale in quantities to suit purchasers by
YOCKNEY & CO.,
Elizabethport, N. J., office 67 Exchange Place, N.Y.
45 12*

**FOR SALE LOW**—A second-hand six horse Steam Engine and Boiler, with all the fixtures. Address Wm. W. WOODRUFF, New Britain, Ct. 48 4*

**UNIVERSAL SCROLL CHUCKS**—Those in want of a superior article and of various sizes will please call or address at the office of the Meriden Machine Co., 15 Gold st, cor Platt st., New York City. 48 3*

**USEFUL DISCOVERY**—For $1, post-paid, I will send to one address instructions how to draw or mark out a correct scroll of any size and proportions, with the same ease and as quick as a circle can be described with the compasses, and the figure will be more regular and equally correct with the geometrical scroll that requires so much time and scientific knowledge to lay out. A. BELCHAMBERS, Machinist,
48 3* Ripley, Ohio.

**IRVING'S PATENT SAFETY CIRCULATING STEAM BOILER**—For Stationary, Locomotive, and Marine Engines These Boilers having been thoroughly tested by scientific experiment and practical use, are being rapidly introduced into every part of the United States. Their claims to superiority are fully supported by the united testimony of highly respectable parties, who have given them the most successful trials. The following are among the chief advantages of this Boiler: 1st. Great increase of heating surface, with diminution of bulk. 2nd. Economy of fuel—a saving of more than 50 per cent, being effected over other boilers 3rd. Economy of space, compactness, and strength of form. 4th. Increased safety from explosion. 5th. Freedom from incrustation. Circulars obtained on application at the Company's Office. Boilers of any required power furnished on short notice. Rights negotiated for all parts of the United States, England, France, and Belgium. All communications promptly attended to.
W. F. PHELPS,
45 3m* Sec'y Irving S. Boiler Co., 347 Broadway, N. Y.

**BUFFALO MACHINERY DEPOT.** JAMES W HOOKER, 36 Lloyd St., Buffalo, offers for sale all kinds of machinery, as follows: Engine Lathes, Planing Machines, Universal Chucks, Cast steel Borers, Drills, Leather and Rubber Belting, Packing and Hose Oils, Millstones, Portable and Stationary Engines, Boilers, and Machinery generally. 43 tf

**PATENT ROCK DRILL.**—The simplest, cheapest and best ever offered to the public. For information apply to A. B. ELY, Esq., Boston, Mass., agent of North American Rock Drilling Company. 43 3m

**HARRISON'S SUPERIOR GRAIN MILLS**—Latest Patent of June 6, 1854.—The New Haven Mfg Co. having the right for said Mills, will keep a supply constantly on hand. A liberal commission paid to agents for sale of the same. For further information address New Haven Manufg. Co., New Haven Ct. 45tf

**MARYLAND INSTITUTE.**—Baltimore Seventh Annual Exhibition will be opened on the 18th September next, and close on the 16th of October. Circulars with rules and regulations, and any information required, will be promptly furnished by application to John S. Selby, Actuary of the Institute.
45 6* THOS. SWANN, Ch. Ex. Com.

**STAVE AND BARREL MACHINERY**—HUTCHINSON'S PATENT.—This machinery, which received the highest award at the Crystal Palace, may be seen there in operation during the ensuing season. Cutting, Jointing and Crozing Staves and Turning Heads. Staves prepared by this process are worth to the cooper from 20 to 40 per cent more than when finished in another way. Applicable alike to thick and thin staves. Apply to C. B. HUTCHINSON & CO., Auburn, N. Y., or at the Crystal Palace. 34tf

**KENTUCKY LOCOMOTIVE WORKS**—Corner of Kentucky and Tenth streets, Louisville, Ky.—The proprietors of the Kentucky Locomotive Works would respectfully inform Railroad Companies and the public generally, that, having completed their establishment, they are now prepared to receive and execute orders with fidelity and dispatch. They will contract for Locomotives, Passenger, Baggage, Freight, Gravel, and Hand Cars, of every style and pattern, as well as all kinds of Stock and Machinery required for railroads. Particular attention will be paid to Repairing, for which they have every facility. They are also prepared to contract on favorable terms for building all kinds of Machine Tools, such as Turning Engines, Lathes, Planers, Drills, Slotting, Splining, and Shaping Machines of every variety of pattern. Having also a large Foundry connected with the establishment, orders for castings are solicited, and will be filled with promptness. Car Wheels of any pattern can be furnished on short notice. Double and single plate and Spoke Wheels of all sizes constantly on hand. Communications or orders must be addressed to OLMSTED, TENNEYS & PECK, Louisville, Ky. 40 6m.*

**PIG IRON**—Scotch and American; also English Boiler Plate and Sheet Iron, for sale at the lowest market prices, by G. O. ROBERTSON, 135 Water st. cor. Pine, N. Y. 40tf

**JOHN PARSHLEY**, No. 5 and 7 Howard st., New Haven, Ct., manufacturer of Machinists' Tools, and Steam Engines, has now finishing off 25 Engine Lathes, 6 feet shears, 4 feet between centers, 15 inches swing, and weighs about 1100 lbs. These Lathes have back and screw gear, jib rest, with screw feed, and the rest is so arranged that the tool can be adjusted to any point the work may require, without unfastening the tool, hence they possess all the good qualities of the jib and the weight lathe; they are of the best workmanship. Price of Lathe with count shaft and pulleys, $155 cash. Cuts, with full description of the lathe, can be had by addressing as above, post-paid. Also four 30 horse power vertical Steam Engines with two cylinders. Price of engine with pump and heater, $800 cash. For particulars address as above. 35tf

**PATENT RIGHT FOR SALE.**—We are ready to dispose of the Patent Right, (or any part of it) of the best Stone Drilling Machine now in use, or we are prepared to furnish working machines at very reasonable prices, these machines will drill from 1 to 7 inches in diameter, and 100 feet deep, and can be worked by Hand, Horse, or Steam Power, one machine performing the work of twenty-five men. For further particulars and circulars with cuts address JAS. T. WHITTEMORE, Agent American Manufacturing Co., 39 State street, Boston. 40 tf

**LEONARD & WILSON**—No. 60 Beaver st, and 109 Pearl st, have constantly on hand and for sale a full assortment of Machinists' and Carpenters's Tools, embracing every variety of Engine and Hand Lathes, Iron Planing Machines, Mortising and Tenoning Machines, Wood Planers, &c. Also, Leather Belting of all sizes made of the best oak tanned butts, stretched on powerful machines, riveted and cemented. 42 13*

**PALMER'S PATENT LEG**—"The best appliance ever invented." Pamphlets containing the testimonials of the first American and European surgeons, and other information concerning this invention sent gratis to all who apply to PALMER & CO., Springfield, Mass.: or 376 Chesnut st, Philadelphia. 42 13*

**NORCROSS' ROTARY PLANING MACHINE.** The Supreme Court of the U. S., at the Term of 1853 and 1854, having decided that the patent granted to Nicholas G. Norcross, of date Feb. 12, 1850, for a Rotary Planing Machine for Planing Boards and Planks, is not an infringement of the Wood Patent.

Rights to use N. G. Norcross's patented machine can be purchased on application to N. G. NORCROSS,
208 Broadway, New York.

The printed Report of the case with the opinion of the Court can be had of Mr. Norcross, at Lowell, or 27 State st., Boston. 36 6m*

**READING'S PATENT CORN SHELLER** and Cleaner—capacity 200 bushels per hour. 9 first premiums awarded in the Fall of 1853. Patent Rights and Machines now for sale at the corner of 2nd Street and Pennsylvania Avenue, Washington, D. C. I challenge the world to produce its equal. Address personally or by mail. WILLIAM READING. 43 13*

**MACHINISTS TOOLS**—Power Planers 4 to 16 feet long, weight 1,000 to 10.000 lbs. Engine Lathes, 6 to 19 feet long, weight 1,700 to 8,400 lbs., swing 21 to 38 inches. Hand Lathes, Gear Cutters, Drills, Bolt Cutters, Slide Rests, Chucks, &c., of best materials and workmanship constantly on hand, and being built, also the best Grain Mills in the country, "Harrison's Patent." For cuts giving full description and prices address NEW HAVEN MANUFACTURING CO., New Haven, Conn. 38 tf.

**THE EUROPEAN MINING JOURNAL**, Railway and Commercial Gazette. A Weekly Newspaper, forming a Complete History of the Commercial and Scientific Progress of Mines and Railways, and a carefully collated Synopsis, with numerous Illustrations of all New Inventions and Improvements in Mechanics and Civil Engineering. Office, 26 Fleet Street, London. Price $6 1-2 per annum. 43

**ENGINEERING.**—The undersigned is prepared to furnish specifications, estimates, plans in general or detail of steamships, steamboats, propellers, high and low pressure engines, boilers and machinery of every description. Broker in steam vessels, machinery, boilers, &c. General Agent for Ashcroft's Steam and Vacuum Gauges, Allen & Noyes' Metallic, Self-adjusting Conical Packing, Faber's Water Gauge, Sewell's Salinometers, Dudgeon's Hydraulic Lifting Press, Roebling's Patent Wire Rope for hoisting and steering purposes, etc., etc.
CHARLES W. COPELAND,
35 tf Consulting Engineer, 64 Broadway.

**PLANING, TONGUING, AND GROOVING**—BEARDSLEE'S PATENT.—Practical operation of these Machines throughout every portion of the United States, in working all kinds of wood, has proved them to be superior to any and all others. The work they produce cannot be equalled by the hand plane. They work from 100 to 200 feet, lineal measure, per minute. One machine has planed over twenty millions of feet during the last two years, another more than twelve millions of feet Spruce flooring in ten months.. Working models can be seen at the Crystal Palace, where further information can be obtained, or of the patentee at Albany, N. Y
27 6m GEO. W. BEARDSLEE.

**STATIONARY STEAM ENGINES**—The subscriber is now prepared to furnish, with or without pumps, boilers, &c., Horizontal Engines on iron bed frames, good strong, substantial, plain finished engines that will do good service, say from 4 horse, $215, to 30 horse, $1,037: they have Judson's patent valves, and will be warranted to work well. S. C. HILLS,
31tf 12 Platt st, New York.

**A. B. ELY**, Counsellor at Law, 52 Washington street, Boston, will give particular attention to Patent Cases. Refers to Messrs Munn & Co., Scientific American. 16 1y*

**REYNOLD'S DIRECT ACTION** and Re-Action Water Wheel—This is one of the most simple, cheap, and efficient Iron Water Wheels now in use—For description, cuts, &c., apply to SAML. B. LEACH, Agent, 60 Beaver st, N. Y. 45 13*

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# Scientific Museum.

### New Kind of Printing.

The following from the "London Journal of the Society of Arts," describes a new discovery by Felix Abate, of Naples, for representing certain objects by printing directly from them:

From the description of the process, it will be remarked—perhaps with some degree of surprise—the excessive sensitiveness of vegetable substances under the joint action of acids and heat, so that an infinitessimal dose of the former, and an instantaneous application of the latter, are sufficient to produce the most striking effect. The process is as follows:—

"Suppose a sheet of veneering wood be the object from which impressions are to be taken: I expose the wood for a few minutes to the cold evaporation of hydrochloric or sulphuric acid, or I slightly wet it with either of these acids diluted, and then wipe the acid well off from the surface. Afterwards it is laid upon a piece of calico or paper, or common wood, and by a stroke of the press an impression is taken, which is, of course, quite invisible; but by exposing this impression, immediately after, to the action of a strong heat, a most perfect and beautiful representation of the printing wood instantaneously appears. In the same way, with the same plate of wood, without any other acid preparation, a number of impressions, about twenty or more, are taken; then, as the acid begins to be exhausted and the impressions faint, the acidification of the plate must be repeated as above, and so on progressively, as the wood is not in the least injured by the working of the process for any number of impressions. All these impressions show a general wood-like tint, most natural for the light-colored woods, such as oak, walnut, maple, &c.; but for other woods that have a peculiar color, such as mahogany, rosewood, &c., the impression must be taken, if a true imitation be required, on a stuff dyed of the light color of the wood.

It must be here remarked, that the impressions, as above made, show an inversion of tints in reference to the original wood, so that the light are dark, and vice versa, which, however, does not interfere with the effect. The reason of it is, that all the varieties of tints which appear in the same wood are the effect of the varying closeness of its fibers in its different parts, so that where the fibers are close, the color is dark, and light where they are loose; but in the above process, as the absorption of the acid is greater in proportion to the looseness of its fibers, the effect must necessarily be the reverse of the above. However, when I wish to produce the true effect of the printing wood, I alter the process as follows: I wet the surface upon which the impression is to be taken with dilute acid, and then I paint with the veneering wood previously wetted with diluted liquid ammonia; it is evident that in this case the alkali neutralizing the acid, the effect resulting from the subsequent action of heat will be a true representation of the printing surface.

Such is thermography, or the art of printing by means of heat. Now it is nothing but natural to anticipate in regard to this art, as well as to the other above-described processes for printing directly from objects, that they will afford most important services to the natural, botanical, mineralogical, and anatomical sciences; as it is by their means that the internal structure of bodies is unveiled to the eyes of the philosopher, and the wonders of nature, in their inexhaustible variety are indefinitely multiplied, to be subjected to the investigation and to serve the gratification of mankind.

But the new art will prove not less useful to the decorative arts, particularly in its application to produce imitations of rare and costly woods, as well as of works of art, mosaic and inlaid work, applicable for paper-hangings, or for furniture, in the place of veneering, these imitations being produced at an exceedingly low cost, while they rival in perfection the original objects, enabling those whose means are limited to obtain decorations at once cheap and in good taste.

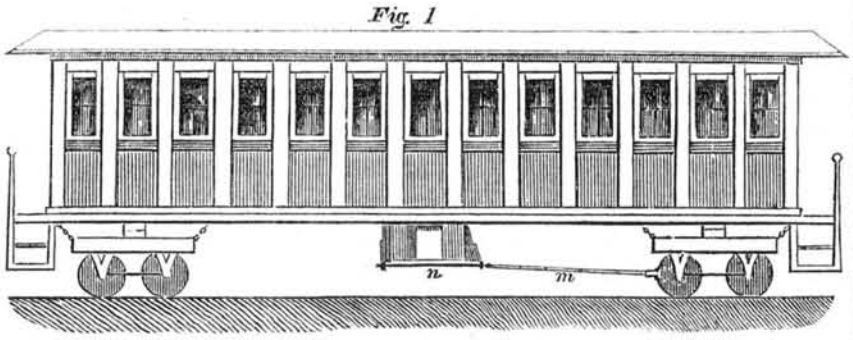
### Praise of American Mauufactures.

The Maine Mechanics' Fair is to be held in Portland on the 19th of next month, on which occasion quite a number of mechanics from the British Provinces are expected to be present. The "Montreal Pilot," speaking of the affair, says:—

"The Maine Charitable Mechanic Association will hold a Fair and Exhibition at Portland, in September, to which we hope Excursion trains will pass from Montreal. The Portland people patronized our Exhibition last year, and we should like to reciprocate their visits, and to witness, what is unquestionable, the evidence offered by their mechanics, of skill and invention in the industrial arts. The ingenuity and capacity of the mechanicians in the Eastern States of America is now universally known and admitted. American implements are being very generally adopted in the old country, where their superiority is proved, and we are near enough to the Eastern States to be enabled to profit by such improvements at the earliest possible moment."

## VENTILATING RAILROAD CARS.

Fig. 1



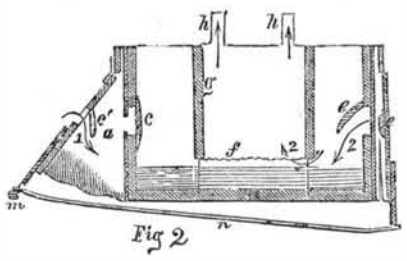


Fig 2

The accompanying figures illustrate an improvement in ventilating railroad cars, for which a patent was granted to Orrin Newton, and J. A. Crever, on the 14th of last March.—Fgure 1 is a side elevation of a railroad car showing a blowing and purifying apparatus underneath. Fig. 2 is a cross section of the blower and purifying cistern, and showing the internal arrangement of the valve and air ways. In this latter figure, the course or direction of the air is indicated by the arrows. Supposing the blower to be taking in a supply of air from the atmosphere, the arrows indicate the course of the current, first into a chamber communicating with the external air, and thence through the vent under valve, *c*, in to the chamber, *a*. At the other side, the reverse or collapsing action of the blower is represented by the air passing out of the outside chambers, under the valve, *e*, and through the chamber in which it is placed, and over the upper edge of the side of the water cistern, *f*, and then down near the bottom of the cistern, forcing the water before it until it passes the lower edge of the partition, as shown by the arrows, 2 2. The air then rises thorugh the water into the cistern above, and from thence it passes into the pipes, *h h*, and from thence into a continuous horizontal slanting perforated pipe, which runs along the whole length of the car inside, and supplies all parts thereof with cool and pure air, and at the same time distributes it evenly throughout—no unpleasant strong current being produced at any one place. The reverse action of the blower or bellows, to that described, produces the same effects. It will be observed that there are two bellows' actions and these receive a reciprocating motion, so that one is open when the other is closed, thus keeping up a continuous supply of air. The rod, *m*, is connected to a crank or eccentric on the axle of the truck, and the connecting rod, *n*, actuates the two bellows. The water in the cistern must not be so high as to be in danger of being forced back by the action of the blowers into the valve chambers. The proper depth can be maintained by a gauge faucet. The impure water can be run off from the cistern by a pipe inserted in its side near the bottom. Air pipes may be continued along the sides of each car, or between the lining and the car, with wall perforations, to admit the air into the body of the car. Various modifications of the plan may be made without departing from the principle shown in the figures. The claim is "for the combination of the bellows and water cistern connected with each other, and with the cars by pipes for ventilating the cars." The nature of the invention will therefore be clearly understood by all, and its merits duly estimated.

More information may be obtained by letter, addressed to Orrin Newton, 129 Second Street, Pittsburg, Pa.

### Preparation for Stuffing Birds.

MESSRS. EDITORS—In a late number of your valuable paper I noticed an article signed "V." on the preservation of Birds, in which he says you were in error in stating arsenic to be the best preservative known. As regards the receipt he recommends (corrosive sublimate) as being used by Waterton, I would refer to "Swainson's Natural History of Birds," under the above head. In which he says, "I made the following experiment with Mr. Waterton's composition in Brazil: the ants, which swarmed in the room I inhabited at Pernambuco, had committed great devastation among the prepared insects and birds. While preserving one of the latter I cut off a piece of the flesh, and after saturating it with the composition, laid it in the path which led to their holes. The little creatures at first seemed to be somewhat suspicious of its wholesomeness; but after walking about and upon it, and examining it with their antennæ, they seemed to pronounce a favorable verdict, for one and all began dragging it away to the entrance of their nests, where it soon disappeared beneath the earthen floor. The experiment was repeated three times, and the same result followed. The mixture had been brought from England, and I had no reason to believe it was defective in the preperation. After this trial I determined on using the arsenic soap, naturally concluding that if ants would devour the soaked flesh of a bird, they would not scruple to attack its skin which could only be washed with the liquor on the inner side."

Arsenic is almost invariably used, and I annex the following receipt:—Camphor, 2½ oz.; Arsenic, powdered, 1 lb.; White Soap, 1 lb.; Salt of Tartar, 6 oz.; Chalk, powdered, 2 oz.

AMATEUR.

Cincinnati, August, 1854.

### Coach Makers Guide.

In our notice of this excellent and useful work, on page 369, a mistake was made in the name of the residence of C. W. Saladee, the Editor, it read Columbia, it should have been Columbus, Ohio. Those wishing more information respecting this work can obtain it by addressing Mr. Saladee.

### LITERARY NOTICES.

APPLICATION OF WROUGHT AND CAST IRON TO BUILDING PURPOSES—This is the title of a work by Fairbairn, C. E., F. R. S., of Manchester, England, who discovered the best form of tube for the Brittania Bridge. It is republished by John Wiley, 167 Broadway, for which he deserves the thanks of all the engineers in our country. It treats of cast-iron beams for supporting floors and presents a history of their application. It also gives the rule for their strength, and an account of the author's experiments. Experiments with wrought iron beams are also presented, and the third chapter is devoted to a consideration of the construction of fire-proof warehouses, and an account of the great Saltaire Mills in England. No engineer can do without this book.

FRUITS THE PROPER FOOD OF MAN—Messrs. Fowlers & Wells, Broadway, this city, have completed and published the above named work of John Smith, edited by Dr. Trall, in a very neat volume. It is a subject which is now engaging no small amount of attention. The great fault with such authors is, they present only one side of the question, and that one most favorable to themselves. This is true with respect to the examples of long-lived fruit eaters here presented. An argument is also attempted to be founded for a fruit diet on the teeth of man, as compared with animals. If this is worth anything, man should not cook his food but live like a beast.

THE THEORY OF COLOR AS APPLIED TO DRAWING—This is an essay on the above subject, by Wm. Minifie, author and publisher, Baltimore, and is designed as an appendix to his excellent book on drawing. It is an able essay, and we must say that such information is much wantde by the majority of draughtsmen; it is a science to which they pay far too little attention.

LECTURE ON THE HUMAN BODY—A lecture on the human body, by John A. Parsons, published by Shepard & Co., Fulton street, this city. The object of the lecturer is to show that the want of fresh air is the cause of most diseases; he describes his own experience, sickness from a confined warm room, a recovery by simple food, and living a great part of the time in the open air.

THE EDINBURGH REVIEW—The last number of this distinguished Review is just issued by its enterprizing publishers, Messrs. Leonard Scott & Co., this city. The leading article is on the diplomatic history of the Eastern question. It is candid and thorough. There is also an able article on the Maine Law agitation. It is an excellent number, and well sustains the ancient reputation of this Review.

ILLUSTRATED MAGAZINE OF ART—A new number of this beautiful work by McElrath & Co., 17 Spruce street, this city, has just been issued. The frontispiece is a picture of Washington, taking farewell of his mother. The best engravings in this number are from paintings by Desportes, an old French painter.

RUSSIA AND ENGLAND—This is a very ably written small volume, by John Reynell Morell, and published by Riker, Thorne, & Co., Fulton street, this city. It presents some curious and very interesting information respecting the Circassian tribes and their conflicts with the Russians.

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